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PHILOSOPHIC SERIES—No. I.

CRITERIA

OF

DIVERSE KINDS OF TRUTH

AS OPPOSED TO AGNOSTICISM

BEING A TREATISE ON APPLIED LOGIC

BY

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PREFACE.

THE age may be characterized as one of *unsettled* opinion. Our ambitious youth are not satisfied with the past, its opinions and practices. Authority is not worshipped by them; they have no partiality for creeds and confessions. They do not accept, without first doubting, the truths supposed to be long established. In searching into the foundation of the old temples, they have raised a cloud of dust and left lying a heap of rubbish. It is an age out of which good and evil, either or both, may come according as it is guided. We may entertain fears, for it is dancing on the edge of a precipice down which it may fall. We may cherish hope, for it is an inquiring age.

Every form and phase of opinion seeks to have a philosophy, in which it may embody and express itself and by which it may be defended. Agnostics is the shape or figure which the doubting and hesitating spirit takes. It is not a new heresy. It has been held by a few in every age; it is now espoused by many, provisionally, till something more solid or showy is propounded. It used to be called Nescience, which maintains that nothing can be known, and Nihilism, which holds that there is nothing to be known. It is of little use trying to argue with it, for it

allows us no premises as a ground on which to start, and has no body or substance that we can attack. It is easy to show that it is suicidal. It is an evident contradiction to affirm that we can know nothing. But when we have demonstrated this we have not destroyed it any more than we have killed a spectre by thrusting a spear into it; for its defence is, that all truth is contradictory. The best way of dealing with it is to allow it to dance as it may, like the shadows of the clouds, and, meanwhile, to found and build up truth and set it up before the mind, that it may be seen in its own light. It is well known that when we see a solid object through and beyond a spectre, the spectre melts away and disappears. So it will be with agnosticism—it will vanish when we fix our eyes upon the truth. This is what is attempted in this little treatise.

The work is expository, and, for the reasons just hinted at, is not controversial. It is meant for those who wish, for their own satisfaction, to know the foundations on which the truth which they are required to believe rests. It is also hoped that, it being a treatise on what Kant calls Applied Logic—which may be made quite as useful as Primary or Formal Logic—it may be used as a text-book.

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INTRODUCTION.

WE have truth when our ideas are conformed to things. The aim of this work is to show that there is truth, that truth can be found, and that there are tests by which we may determine when we have found it. We do not propose to guide inquirers in any particular department of investigation; this can best be done in introductions to the books and lectures treating of the several branches of knowledge.

Kant and the German metaphysicians have shown again and again that there is no one absolute criterion to settle all truth for us; that will determine, for example, at one and the same time, whether there is a fourth dimension of space; whether the planet Jupiter is inhabited; where the soul goes at death, and what kind of crops we are to have next year. But it can be shown that there are truths which may be ascertained, and that there are criteria which prove when they are so, and these clear, sure, and capable of being definitely expressed. But the test which settles one truth for us does not necessarily settle all others, or any others. It is necessary to distinguish between different sorts of truth, and we should be satisfied when we find a test of each kind. The aim of the criteria, it should be noticed, is not to help us to discover truth, but to determine when we have found it.

The work is divided into two Parts: one in which we seek to find the Criteria of First Principles, and in the other the Criteria of Individual Facts and their Laws.



PART FIRST.

CRITERIA OF TRUTHS TO BE ASSUMED.

SECTION I.

FIRST AND FUNDAMENTAL TRUTHS.

THE mind must start with something. There are things which it knows at once. I know pleasure and pain. I do more: I know myself as feeling pleasure and pain. I know that I am surrounded with material objects extended and exercising properties. I know by barely contemplating them that these two straight lines cannot contain a space. These are called first truths. There must be first truths before there can be secondary ones; original before there can be derivative ones. Can we discover and enunciate these? I believe we can.

We are not at liberty, indeed, to appeal to a first principle when we please, or because it suits our purpose. When we are left without evidence, we are not therefore allowed to allege that we need no evidence. When we are defeated in argument, we are not to be permitted to escape by falling back on what is unproved and unprovable. It is true that we cannot prove everything, for this would imply an infinite chain of proofs every link of which would hang on another, while the whole would hang on nothing—that is, be incapable of proof. We cannot prove everything by mediate evidence, but we can show that

we are justified in assuming certain things. We cannot prove that two straight lines cannot enclose a space, but we can show that we are justified in saying so. We can do so by the application of certain tests.

SELF-EVIDENCE is the primary test of that kind of truth which we are entitled to assume without mediate proof. We perceive the object to exist by simply looking at it. The truth shines in its own light, and in order to see we do not require light to shine upon it from any other quarter. We are conscious directly of self as understanding, as thinking, or as feeling, and we need no indirect evidence. Thus, too, we perceive by the eye a colored surface, and by the muscular touch a resisting object, and by the moral sense the evil of hypocrisy. The proof is seen by the contemplative mind in the things themselves. We are convinced that we need no other proof. A proffered probation from any other quarter would not add to the strength of our conviction. We do not seek any external proof, and if any were pressed upon us we would feel it to be unnecessary—nay, to be an encumbrance, and almost an insult to our understanding.

But let us properly understand the nature of this self-evidence. It has constantly been misunderstood and misrepresented. It is not a mere feeling or an emotion belonging to the sensitive part of our nature. It is not a blind instinct or a belief in what we cannot see. It is not above reason or below reason ; it is an exercise of primary reason prior, in the nature of things, to any derivative exercises. It is not, as Kant represents it, of the nature of a form in the mind imposed on objects contemplated and giving them a shape and color. It is a perception, it is an intuition of the object. We inspect these two straight lines, and perceive them to be such in their nature that they cannot enclose a space. If two straight

lines go on for an inch without coming nearer each other, we are sure they will be no nearer if lengthened millions of miles as straight lines. On contemplating deceit we perceive the act to be wrong in its very nature. It is not a mere sentiment, such as we feel on the contemplation of pleasure and pain; it is a knowledge of an object. It is not the mind imposing or superinducing on the thing what is not in the thing; it is simply the mind perceiving what is in the thing. It is not merely subjective, it is also objective—to use phrases very liable to be misunderstood; or, to speak clearly, the perceiving mind (subject) perceives the thing (object). This is the most satisfactory of all evidence; and this because in it we are immediately cognizant of the thing. There is no evidence so ready to carry conviction. We cannot so much as conceive or imagine any evidence stronger.

NECESSITY is a secondary criterion. It has been represented by Leibnitz and many metaphysicians as the first and the essential test. This I regard as a mistake. Self-evidence comes first, and the other follows and is derived from it. We perceive an object before us and we know so much of its nature; and we cannot be made to believe that there is no such object, or that it is not what we know it to be. I demur to the idea so often pressed upon us that we are to believe a certain proposition because we are necessitated to believe in it. This sounds too much like fatality to be agreeable to the free spirit of man. It is because we are conscious of self that we cannot be made to believe that we do not exist. The account given of the principle by Herbert Spencer is a perverted and a vague one: all propositions are to be accepted as unquestionable whose negative is inconceivable. This does not give us a direct criterion, as self-evidence does, and the word inconceivable is very ambiguous. But necessity, while it is not

the primary, is a potent secondary test. The self-evidence convinces us; the necessity prevents us from holding any different conviction.

UNIVERSALITY is the tertiary test. By this is meant that it is believed by all men. It is the argument from catholicity, or common consent—the *sensus communis*. All men are found to assent to the particular truth when it is fairly laid before them, as, for instance, that the shortest distance between two points is a straight line. It would not be wise nor safe to make this the primary test, as some of the ancients did. For, in the complexity of thought, in the constant actual mixing up of experiential with immediate evidence, it is difficult to determine what all men believe. It is even conceivable that all men might be deceived by reason of the deceitfulness of the faculties and the illusive nature of things. But this tertiary comes in to corroborate the primary test, or rather to show that the proposition can stand the primary test which proceeds on the observation of the very thing, in which it is satisfactory to find that all men are agreed.

Combine these and we have a perfect means of determining what are first truths. The first gives us a personal assurance of which we can never be deprived; the second secures that we cannot conquer it; the third that we can appeal to all men as having the same conviction. The first makes known realities; the second restrains us from breaking off from them; the third shows that we are surrounded with a community of beings to whom we can address ourselves in the assurance of meeting with a response.

But in order to be able to apply these criteria properly we must carry along with us certain explanations and limitations.

1. It should be noticed of intuitive truths that they are,

in the first instance, *individual* or *singular*, and that we need to generalize the single perceptions in order to reach general maxims. In them we begin with contemplating a single object, say an external object, and know it to be extended and solid, or an act of benevolence and know it to be good, or an act of cruelty and proclaim it to be evil. But we can generalize the individual perceptions, and then we have general maxims or axioms, which we can apply to an infinite number of cases. We perceive that these two parallel lines will never meet; and we are sure that we should affirm the same of every other set of parallel lines, and hence we reach the general maxim that parallel lines will never meet. We perceive, on the bare contemplation of this deed of deceit, that it is base, but we would feel the same of every other deed of deceit, and hence the maxim deceit is evil. But it should be observed that in the formation of these general principles there is a discursive act, in the shape of a generalizing process, involved. It is here that there may creep in error, which is not in the intuitive but in the discursive process; for we may form a partial, a one-sided, or exaggerated generalization. Thus, on discovering a particular effect we at once judge or decide that it has a cause. But when we would make the principle universal we may fall into a mistake, and declare that "everything has a cause," which would require an infinite series of causes and make it necessary to hold that God himself has a cause. In such a case our generalization is wrong. But let the maxim take the form that "everything which begins to be has a cause," and we perceive that on a thing presenting itself to us as beginning we should proclaim it to have had a producing power. We thus see that there may be both truth and error in our metaphysical or moral maxims: truth in the primitive perception at the basis of the whole, while there may be hastiness leading to mutilation in the ex-

pression. Hence the wrangling in metaphysics. Thus, everybody acknowledges that two parallel lines can never meet, but there may be disputes as to the fit form in which to put the axiom. So, in regard to the generalized principles that every effect has a cause, that every quality implies a substance, that virtue is commendable, there may be a difficulty in expressing exactly what is meant by cause and effect, what by substance and quality, and what by virtue and moral good; and we may find that when we would make the expressions definite we fall into grievous mistakes, and this while we are certain that there is a self-evident, necessary, and universal truth if only we can seize it.

2. First truths are of various kinds, which we shall endeavor to classify. Some of them are

Primitive Cognitions. In these the object is now before us, and is perceived by us. We perceive that this body has three dimensions in space, and cannot be made to believe otherwise. We decide that this thing, material or mental, cannot be and not be at the same time; that these two things, being each equal to the same thing, are equal to one another. In these cases the object is perceived at once and immediately. But there are others in which the object is not present, and the convictions may be regarded as

Primitive Beliefs. Here there is still an object. It is not present, but still it is contemplated. We have known the object somehow, and on conceiving it beliefs become attached to it. Thus, we know time in the concrete, and in regarding it we believe that time is continuous, that time past has run into time present, and that time present will run into time to come. A number of such faiths gather round our primitive cognitions and widen them indefinitely. We see two points in space; we are sure that there is

space between, and that the shortest line between the two is a straight line. We can rise to still higher faiths. We believe of certain objects, say space and time, and God—when we come to know him—that they are infinite, that is, that they are always beyond our widest image or concept and such that nothing can be added to or taken from them. The senses cannot give us these beliefs, nor can the understanding construct them out of the materials supplied by the senses. Some of them, such as the idea of the infinite, the perfect, lift us above our immediate experience into a higher sphere. We begin in all such cases with realities perceived or apprehended; and we are sure, if we proceed legitimately, that we end with realities. It should be remarked that in order to our having these cognitions and beliefs it is not necessary to express them or even put them in the shape of propositions. It is necessary first to have cognitions or beliefs regarding them before we form comparisons of them or affirm that they exist or possess certain properties. But out of these we can form

Primitive Judgments, in which we predicate—that is, make affirmations or denials—or discover certain properties or relations, as when we say space and time are without bounds and exist independent of the contemplative mind. In order that these judgments may be primitive they must be pronounced as to objects which have been perceived by intuition.

I ought here to add that the mind is capable of perceiving at once certain moral qualities, and we have

Moral Cognitions, Beliefs, and Judgments. On contemplating an act of self-sacrifice done for a friend or a good cause we know it at once to be good, or an act of selfishness we perceive it to be evil. When these acts are done by our neighbors we cannot notice them directly, but we are sure that they are good or evil; and these may be

regarded as beliefs. When we put them in propositions we exercise judgment, as when we declare that sin deserves punishment.

But it will be asked, do we perceive the good and evil to be a reality, to be in the very thing. It might be allowed, it is urged, that intuitively we perceive matter to be extended and that two straight lines cannot enclose a space; for the matter, and the straight lines are before us. But moral excellence and depravity have no such reality, they exist only in our conceptions. To all this I reply that we have the acts before us in the one case as in the other; we have before us every day a deed and an implied affection of benevolence or of cruelty, and in it we perceive the morally good or the morally evil. The benevolence in this act of charity has a reality quite as much as the hand that bestows the alms or the alms bestowed. The malevolence in this calumny is a reality, quite as much as the tongue that uttered it or the newspaper that published it. The reality is of a different kind, no doubt, but it is of a kind which all acknowledge when they approve of the charity and disapprove of the scandal, and perhaps impose a penalty upon the person who has been guilty of it.

It is of vast moment, to ourselves and to the community, that we and all others should acknowledge, theoretically and practically, that there are other realities besides those of sense, and these higher and more enduring. It is the worst influence of the prevailing agnosticism that while it can have little power to keep us from believing in the things that are seen, it may have a mighty influence in keeping us from believing in and realizing the things that are spiritual, and therefore unseen, but eternal. The idealist errs when he denies the reality of a material world which, though temporal, is real. But the sensualist errs far more egregiously when he denies the existence of a spiritual

world, which is real and eternal. It should be the aim of the highest philosophy to carry us up, as Plato endeavored to do, to this high and pure region which has as high an existence as the heavens, which are its special dwelling-place. We should train ourselves, and especially train the young, to retreat from time to time into the higher world, that they may there hold communion with all that is great and good and elevating.

3. The complexity of our mental states places difficulties in the way of our applying the criteria. There are opinions which have been acquired by a lengthened and constant observation, which association has wrought into our very nature, so that we feel as if they are native and necessary ; and yet some of them may be mere hereditary or popular prejudices which have no warrant in reason. In particular, experiential truths or even fancies and prejudices may so mingle with our intuitions that it seems impossible to separate them and determine which is the self-evident principle in the complex notion. These circumstances, it should be admitted, do throw difficulties in the way of the application of our criteria. But these are not greater, after all, than the application of tests in any other department of knowledge, as, for example, chemical tests to determine the existence of poisons in very complex mixtures, and generally the verification of scientific discoveries of every description. But, in spite of these difficulties, the tests can be applied if only pains be taken to distinguish the things that differ and to lay aside the things that are irrelevant. It is possible, by a careful discrimination, to separate the associated from the primitive judgment, and thus seize the conviction that is native and necessary and apply the tests to it.

4. In many instances it is essential to apply the tests to alleged intuitive truths before we put trust in them. In

some cases, indeed, the spontaneous belief is so clear and assured that we may follow it without instituting any reflex examination. But in other cases the supposed necessary truth may be mixed with extraneous matter which adulterates it. Every one acknowledges that for the purposes of accurate science it is of importance to have the axioms of mathematics and mechanics so enunciated that no empirical element has entered. In morals and jurisprudence evil consequences might arise from mixing up doubtful principles with true ones, from assuming, for instance, that the promotion of happiness is the sole and essential quality of virtue. Without a sifting we might often be tempted by indolence or prejudice to assume as true what ought to be proven, or what, in fact, cannot be proven. It is of special importance to apply these tests to all those higher faiths which perform so important a part in mystic philosophy and theology. In these there is commonly a real intuition, and this, possibly, of an elevating, inspiring order as a nucleus; but around this there may gather a halo consisting merely of mist irradiated by the light in the centre. All high minds have felt the influence of these faiths, and some have been transported by them. But earthly ingredients are apt to mingle with the ethereal and heavenward aspirations, and claim all the authority which these have. The gilding gold is made to give currency to the coin. Truth and error thus come to be hopelessly intermixed, and visions of fancy come to be regarded as revelations of heaven. The sceptic detects this, and in pulling up the tares he uproots the wheat; to vary our illustration, in tearing down the creepers he pulls asunder the wall on which they grow. These results are to be avoided by a reflex examination of the whole mental exercise. The idea of Plato, the ecstasy of the Alexandrians, the perfect of Descartes,

Malebranche's vision of all things in God, the absolute of Kant, Schelling, and Hegel, the supposed inspirations of poets and the revelations to prophets who utter grand truths—all these point to and imply high realities; but they are liable to run into fancies and extravagances, into follies and deceptions, which mislead and delude those who believe in them, pervert their judgments, and render them ridiculous in the view of the world. There is gold in the mine, and all we have to do is, by crucial tests, to separate it from the dross that we may have the true metal.

SECTION II.

REASONED TRUTHS.

When we have got truth by self-evidence or by observation, we may add indefinitely to it by inference, in which we proceed from something given or allowed to something else derived from it by the mind contemplating it. If we have truth and reality in what we start with, and if we reason properly, we have also truth and reality in what we reach. Of course if what we assume be fictitious, what we arrive at may be the same. These inferences may be of three kinds, each of which has its tests.

IMMEDIATE INFERENCES, or what I am disposed to call *implied judgments*. Here we have a judgment given, and we derive other judgments merely from contemplating the two notions compared. All general concepts, as logicians know, have both extension and comprehension. The extension has reference to the objects in the class; the comprehension to the qualities which combine them. Now, on the bare contemplation of the extension of the concepts we can draw certain inferences, as when it is granted that

"all men have a conscience" we infer that "this man has a conscience," even though he be a liar. From the same proposition we can draw the inference in comprehension that the possession of a conscience is an attribute of man. The canon is that whatever is involved in the extension and comprehension of a notion may be legitimately inferred.¹

MEDIATE REASONING.—Here we do not discover the relation of two notions, or, as we call them when expressed in language, terms, by directly comparing them, but we can do so by means of a third term which has a connection with both. Reasoning thus consists in comparing two notions by means of a third. The canon of reasoning in its most general form is, "Notions which agree with one and the same notion agree with one another," with a

¹ From the proposition "men are responsible" the following may be drawn :

In Extension.

Every man is in the Class Responsible ;
 This man is responsible ;
 Some men are responsible ;
 Every tribe of mankind is responsible ;
 It is not true that some men are not responsible, etc., etc.

In Comprehension.

Man exists ;
 Responsibility is a real attribute ;
 Responsibility is an attribute of every man ;
 Responsibility is an attribute of this man ;
 Responsibility is an attribute of every tribe of men ;
 Responsibility is an attribute of some men ;
 Irresponsibility may be denied of all men ;
 No man is irresponsible ;
 Irresponsible beings are not men ;
 Men of wealth are responsible with their wealth ;
 To punish men is to punish responsible men.

See "The Laws of Discursive Thought: being a Text-book of Formal Logic," by James McCosh, LL.D.

corresponding dictum for negative reasoning. But the word "agree" is vague, and it is necessary to state the nature of the agreement. This is done by two formulæ, which act as the criteria of reasoning.

The Dictum of Aristotle.—We have before us a crocodile, and wish to know how it brings forth its young. Our two terms are "crocodiles" and "bringing forth their young." We find that it has been ascertained by science that the crocodile is a reptile, and that reptiles bring forth their young by eggs. We are now prepared to reason: "The crocodile, being a reptile, must bring forth its young by eggs." Here we have three terms: two called the extremes, the original ones which we wish to compare, "crocodiles" and "bringing forth their young by eggs," and a middle "reptile," by which we compare them. The process when expanded takes the form of two propositions, called the premises, and the conclusion drawn from them.

All reptiles bring forth their young by eggs;

The crocodile is a reptile;

Therefore it brings forth its young by eggs.

The conclusion is reached by the bare contemplation of the premises. The premises being true, the conclusion is true.

But this reasoning proceeds on a principle which it is desirable to have expressed and announced when it becomes the test of this kind of reasoning. It is, "Whatever is true of a class is true of all the members of the class." What is true of reptiles generally is true of the reptiles called crocodiles, and of every individual crocodile. If we have not something that can be predicated—that is, affirmed or denied—of a class to constitute a premise, no conclusion can be drawn. Thus, if only some reptiles are oviparous, if only the greater number are so, we are not entitled to conclude that the crocodiles must be so. We have thus a very decisive and easily applicable test of reasoning.

In formal logic this governing principle is spread out in various forms, so as to enable us to apply the test to every case of ratiocination. First, the syllogism is found to be the universal form of mediate reasoning. Then logicians divide reasoning according to the position of the middle term, which is the nexus of the argument, and this gives four figures. I do not mean to unfold these; they are to be found in every treatise on elementary logic. All that I have to do is to show that thereby we have a criterion of ratiocination.

All this was established by Aristotle in his "Prior Analytics." A number of attempts have been made since his day to set aside his analysis or to improve upon it. None of these have met with anything more than a temporary success. But I am not convinced that the dictum of Aristotle is the regulating principle of all reasoning; it regulates only that reasoning which involves a general notion—that is, a class notion. It can be shown, I think, that there is a ratiocination which does not proceed on the principle of classes, but of identity or equivalence. Thus, we find that the stick A is equal to the stick B, and the stick B is equal to the stick C, and we conclude that the stick A is equal to the stick C. Here we have no classes or members of a class. The canon is, "Notions which are equivalent to one and the same third notion are equivalent to one another." In ratiocination of this description the subject of the propositions may be made the predicate, and the predicate the subject:

Shakespeare wrote "Hamlet;"

The writer of "Hamlet" is the greatest English poet;

Shakespeare was the greatest English poet.

All reasoning, in order to be valid, must fall under one or other of these rules, which are therefore the criteria of legitimate inference. When a professed argument cannot

be brought under either of them, it is a proof that it is not reasoning. When, on endeavoring to bring it under them, we find that it is not in accordance with them, we may conclude that the inference is not valid.

Reasoning may take several forms, which are legitimate provided they are in conformity with the dictum of Aristotle or the principle of equivalents. The natural form in ordinary circumstances is the categorical, in which we lay down a general principle and bring a particular under it; as when we say, "Consumption is a fatal disease, and as this man has consumption he has a fatal disease;" or, not being sure of the fact, we say, "If this man has consumption he has a fatal disease." This reasoning is hypothetical, and is quite as valid as the categorical. Or the reasoning may take the disjunctive form: "This disease is either a severe cold or consumption. It is not a severe cold; therefore it is consumption."

The greater portion of the reasoning in mathematics is regulated not by the dictum of Aristotle relating to classes, but the dictum of equivalence or equipollence.

SECTION III.

THE JOINT DOGMATIC AND DEDUCTIVE METHOD.

Here we begin with assuming something because it is self-evident, needing no farther proof; and then proceed to infer other truths involved. The best example is found in geometry, where there are laid down at the opening definitions of such things as triangles, circles, squares, and also axioms, or self-evident truths; and from these, and as involved in them, we get farther truths by deductive reasoning. We have also examples in Formal Logic, as

when the dictum of Aristotle is assumed, that whatever is true of a class is true of the members of the class, and from this get the modes and figures of reasoning, and innumerable inferences. The truths thus drawn are called apodictic by Aristotle and demonstrative by the moderns. In all such cases we have the tests of the assumed truths in self-evidence, necessity, and universality, and of the reasoned truth in the syllogism.

This method is powerful when we have the means of using it—that is, self-evident truths. But the field in which we have these is a very contracted one. In all investigations which deal with scattered facts the method is not available. “A clever man,” says Sir John Herschel (“Nat. Phil.,” § 67), “shut up alone and allowed unlimited time, might reason out for himself all the truths of mathematics by proceeding from those simple notions of space and number of which he cannot divest himself without ceasing to think. But he could never tell, by any effort of reasoning, what would become of a lump of sugar if immersed in water, or what impression would be left on his eye by mixing the colors of yellow and blue.”

The method has often been applied illegitimately—that is, to departments which have to deal with scattered facts. In the sixteenth century, when mathematics were making such progress, there were attempts to carry the geometrical method into all branches of science. It was used by Descartes and his extensively ramified school in philosophy and also theology. Assuming the existence of thought, of *cogito*, as a truth which cannot be doubted, he thence proves his own existence, which it would have been wiser in him to assume, and then from the idea of the infinite and the perfect in himself, he argued there must be a perfect being existing whose veracity guarantees our idea of matter. Spinoza, in his Ethics, begins with a formidable

array of definitions, axioms, and postulates, whence he draws out a system in which God is at once extension and thought, and being the All is the morally evil in the world as well as the good. Samuel Clarke, finding that man could not get rid of the idea of space and time, argued that since all things must either be substances or modes, and as space and time are not substances, they must be modes of a substance, which is God, which by other considerations he clothed with benevolence. In these connected systems doubtful definitions were carried out, often by right reasoning, to very doubtful results. In all cases in which we have to use facts, and in which we seek to rise to facts, such as the existence and character of God, there is another method, that of induction, with it, it may be, deduction, which we may and ought to employ.

PART SECOND.

CRITERIA OF INDIVIDUAL FACTS AND THEIR LAWS.

SECTION IV.

INDIVIDUAL FACTS.

AN eminent man is reported as saying that there are more false facts than false theories. There is truth in this. Facts are apt to have adjuncts to them in the reports given by others, and even in our own apprehensions of them, or they are so mutilated that they take an entirely distorted form. We all know how in story-telling additions and subtractions are apt to be made even by honest narrators, so as to make it more attractive and picturesque.

The individual facts are primarily made known by the senses. In these there may be very numerous and complicated details, and any of these if left out may so far distort our apprehensions and the account we give of them. Besides, sensations, feelings, fancies, inferences, attachments, and repugnances may mingle with our pure perception of sense and cast a glow or a gloom around them. In these sections I am showing that we have to guard against these temptations, and that when we do so we can arrive at positive truth.

Observation Proper and Experiment.—These are the two ways in which we obtain facts. In the former we

view objects simply as they present themselves ; in the latter we put them in new positions. The advantage of Experiment over Observation Proper (which may be so designated as Experiment, is, after all, a kind of Observation) is that it enables us to perceive the proper action of the several agencies joined in nature. We wish to know whether bodies, whatever be their weight, fall to the ground in equal times. Common observation seems to show that they do not, as we see the gold nugget and the leaf falling at very different times. But we put the gold and the leaf into the exhausted receiver of an air-pump, and find them fall the same instant. What we should do in all observation is to note precisely what has occurred, and to report it accurately without any additions, subtractions, or coloring ; we must be especially on our guard against torturing the facts in order to make them give a certain kind of testimony.

THE SENSES.—The older Greek philosophers adopted the common opinion that the senses deceive. The sceptics took advantage of the doctrine and argued that if the senses deceive there is nothing we can trust in. The sounder philosophers met them by calling in reason, which corrected the illusions of the senses and conducted to truth. Aristotle corrected both these forms of error, and showed that the supposed deception arises not from the senses themselves, but from the use that is made of their intimations.

To save the senses it is necessary to draw certain distinctions. In particular, we should distinguish between our original and derived perceptions. The former are intuitive, without any process of inference, having the sanction of the author of our constitution, and never deceiving us. The latter imply inferences from the revelations of sense perception, and there may be errors in them.

I believe we can approximately determine what are the

original perceptions of the various senses. By several of the senses we seem to perceive merely the bodily organs as affected. This is the case with taste and with smell, in which we discern simply the palate and the nostrils with a certain sensitive expression of the palate and the nostrils. It is the same also, I believe, with hearing and with touch proper or feeling, in which we know simply an affection of the ear and the periphery of the body. I rather think that by the muscular senses and the eye we discern more; a body resisting our organism and a colored surface affecting us. In all these intuitive perceptions there is no ratiocination, and there are and can be no mistakes. But in all beyond there are inferences, and in these there may be less or more of error. A person tells us that he had mutton to dinner, whereas all he knew was that there was a certain taste in his mouth which he argued was that of mutton. He further lets us know that he felt the smell of roses in a certain garden, where he also heard a flute playing, whereas immediately he felt only an odor in his nostrils and a sound in his ear. He is sure that he was struck in the dark with a man's hand, whereas the blow was from a stick. He depones that he saw a man strike his wife, while all he saw was an action of one figure upon another, and it turns out that the woman was not the man's wife. Hence arise some of the mistakes in witness-bearing; they are not lies of the senses, but errors in the inferences we draw from them.

In all such cases we form a general rule out of certain experiences, and in hasty thinking we illegitimately apply it. We regard sound as coming to our ear in a straight line from the sounding body, but the undulations have been reflected from a wall, and we place the bell from which they have come in that wall, whereas the belfry is actually in a different direction. It is on this principle

that the ventriloquist proceeds when he makes a human voice come from a post or an animal. Having laid down the rule that when there are few observable things between us and an object, it must be near, we look on that island seen across the sea as much closer to us than it is.

Some other distinctions must be attended to. Sensations and feelings, of pleasure and pain, of beauty and ugliness, associate themselves with all our perceptions, and are apt to give a color and even a shape to the actual things. We remember more particulars about the objects that excite us, whether joyously or grievously, than those that are dull and commonplace, and we give these a large, often an undue place in our narrative, and thus distort them and give them a different meaning.

The rapid inferences from the intimations of the senses may at times serve a good purpose. They may prepare us to meet and avoid danger when cool and correct argument would not be quick enough. A fire-bell, the jolt of a carriage in which we are riding, a stumble in walking, the fog-whistle at sea, may at times raise up an unnecessary alarm, but the calm reflection which succeeds will soon dissipate this, and at other times they save us from danger.

We have abundant means of correcting the hasty judgments. We have other senses at hand to correct the apparent deceptions of one sense. We imagine the figures raised optically by magicians to be real, but we can dissipate the illusion by thrusting our hand into the spectre. We may mistake beef for mutton as we eat it, but it is easy to apply to the person who prepared the food to set us right. A diseased eye may present objects double, but the touch will correct the mistake. In all cases we can secure that what is told us by the senses is true by judiciously using the means of correction at our disposal.

SELF-CONSCIOUSNESS.—Metaphysicians commonly main-

tain that the revelations of consciousness are always to be trusted ; that they settle everything in the last resort, and are, in fact, ultimate and infallible. But there are physiologists, and of a late date even metaphysicians, who assert that the acts of consciousness are variable and often deceitful. They show us that people often misapprehend what their real feelings are, and give a wrong account of them. It is alleged that there are persons who say that they believe certain tenets while they do not, only imagining that they do. There are cases of persons with a "double consciousness," as it is called, remembering, in the one state, their experience of that state, but without any remembrance of it in the other.

But in all such cases we attribute to consciousness what it is not responsible for. In regard to the inner, as in regard to external sense, we have to draw distinctions if we would determine its precise testimony. It is acknowledged by all psychologists that, properly speaking, we are conscious of self only in its present state. In that state there are various affections : there are sensations and feelings and inferences along with the pure consciousness, and we are apt to mix them up with each other, and thereby breed confusion in our apprehensions and in the account we give of what is in our mind. When we review our consciousness we are dependent on our memory, and we may omit some aspects of our experience and add associated affections. Here, as in regard to the bodily senses, distance is apt to lend enchantment to the view. The hypochondriac magnifies his sorrows, and the gay youth his pleasures in the past. People are apt to think their youth was happier than it really was ; they remember their joys and forget the little disappointments which were then felt to be so great and now appear so little.

What is so called is not really "double consciousness."

It arises from a diseased state of the brain hindering psychological action. The person is unable to recall what has been laid up in the past, and he lives in the present and lays up a new experience, which he uses in his new state, but which he may lose in a later condition of his brain. The man is not under a double consciousness, but in two states, in each of which the consciousness may be correct.

It thus appears that man may trust in what his consciousness really reveals. It makes known to us self in its present state. It should be noticed that it does not know merely a quality of self, such as thinking or feeling; it knows self as thinking or feeling. This is of the nature of a first truth or an intuition; we perceive the very thing. This self constitutes what we call personality—that is, we know ourselves as persons. On comparing the self as presently known with the past self as then known, we declare ourselves to be the same. This is personal identity, which is a self-evident, necessary, and universal truth.

MEMORY.—The vulgar opinion is that the memory may deceive. But it does so only as the senses deceive. The mistakes are not in the memory proper, but in the associated affections and the inferences drawn from them. We ask a man how long it is since he visited us. His recollection is dim, and he makes the time longer than it is, six years instead of five. It is not possible for him to remember his continued existence during these years, any more than it is possible for the eye to see every point in space between us and objects five or six miles off. In both cases he has to avail himself of intervening objects. The event, he remembers, took place after his marriage, seven years ago, for his wife was with him; and before his mother's death, four years ago, for he remembers we made inquiries about her health. But he does not recollect at what precise date between these two occurrences the visit

was paid. The reminiscence is dim and he concludes that the event is more distant than it really is. Our memories in regard to time all need such mile-stones, or rather time-marks, to enable us to measure the distances. Now, in all these processes there may be mistakes. It is much the same with our recollections of the other circumstances connected with events, such as the shape and color of objects, their position in relation to other things, their surroundings, their antecedents and consequents. The vision is obscure and we have to fill it up, and we do so by fancies of our own, which so far modify the scene, perhaps pervert it. We are apt to join causes and consequences with the bare occurrences. This is especially apt to be the case with conversations, with the sentences uttered by ourselves or by others. We recollect how we felt, what we meant to say, what effect was produced on us by what others said, and we confound these with what was actually uttered. Hence the misunderstandings, the perversions which are so apt to appear in the reports of conversations. In the complicated scenes through which we have to pass we remember those parts that have been most vivid—these, I suppose, have impressed themselves most deeply on our organism, and the others are feebler. The consequence is that the record has faded in some places, and we make additions in order to complete it. In this way we clothe our bare memories with dresses, which may make them look sadder or more joyful than the events really were at the time.

But it is always possible to distinguish between our original and proper recollection and our superadded and fictitious ones. Those who are conscientious will be careful not to add out of their own stores to their memories. When the reminiscence is dim they will at once confess it, especially in witness-bearing, and when the character of a fellow-man may be affected. In all scenes which we wish

to remember accurately, we will take pains to note the exact incidents at the time they occurred. There are events of which we may be, and are certain, that they have happened.

TESTIMONY.—It is not necessary to suppose, with some of the Scottish metaphysicians, in their answers to Hume's argument against miracles, that there is an original instinct or principle of common sense leading us to trust in testimony. I believe, indeed, that there is a social affection in all of us inclining us to have an affection for, and trust in, those we meet with, especially in father and mother, brothers and sisters, and leading us to believe in what they say. But the belief in testimony is the result of experience, and is modified by experience; we trust in certain testimonies, but not in others. There is a conscience in every man which disposes him, if he does not resist it, to speak truly; even selfishness prompts him not to lose the confidence of his fellow-men by deceiving them. Hence, the great body of mankind speak the truth when they are not led to act otherwise by a desire to excuse themselves, or by malignity toward their neighbor, or some other like motive. We can reach truth by means of testimony. It was in his haste that David said "All men are liars."

The testimony of one man is often sufficient, because of his character known otherwise; and because he has no motive to deceive. We lay down rules for our guidance in judging of testimony, as that it is a good sign if the statements are direct and unartificial. In most cases we seek to have the testimony of one man confirmed by another, that in the mouth of two or three witnesses every word may be established, it being shown that there has been no collusion or conspiracy. There are commonly circumstances which corroborate or detract from the testi-

mony. Circumstantial evidence is at times sufficient to prove that a prisoner has been guilty, when there is no direct evidence of the act. In witness-bearing, books of law and judges on the bench lay down rules which may guide the jury in the verdict which they bring in.

HISTORY.—Here the evidence is mainly that of written testimony, which, however, may be confirmed by original historical documents, such as monuments, inscriptions, coins, and ancient charters. Laplace, misled by a false analogy derived from the diminution of light when reflected successively from a number of surfaces, declares that the value of testimony may be weakened by transmission, and at length altogether lost (*Essay on Prob.*). This is true of tradition, that is, of oral testimony transmitted from mouth to mouth, or from age to age; but Sir G. C. Lewis (*Meth. Obs. and Reas.*) has shown that, “when the testimony of the original witness has once been obtained and recorded, either by himself or others, in an authentic form, it is perpetuated so long as the written memorial of it is preserved in the original, or in a faithful transcript, and may at any time be used for historical purposes.”

SECTION V.

INDUCTION.

This consists essentially in gathering facts in order to ascertain the order that they follow, which will be found to consist in laws which they obey. It was known to Aristotle that the mind starts with the singular (τὸ ἐκάστων) before it rises to the universal (τὸ καθόλου), which, as he expresses it, may be first in the order of nature, while the singulars are first in the order of time. - He practised the method in his natural history, very specially by the collec-

tions which were supplied by his pupil, Alexander the Great. But he cannot be said to have systematically expounded induction as a method of discovering truth. This was reserved for Francis Bacon, who enjoined that in observational science, the mind should begin with particulars, which are to be collected and collated, and then rise to minor, middle, and major axioms, and thence finally to causes and forms. All this was to be done not *per saltum*, but by gradual steps. The method has since been made more definite by Sir John Herschel, in his "Natural Philosophy;" by Dr. Whewell, in his various works on "The Philosophy of the Inductive Sciences;" by John S. Mill, in his "Logic," and by others. The method will become more perfected as science advances with its observations and experiments, with its instruments and its critical examinations. That method has a Means and an End. The Means are observation with analysis. The End is the discovery of laws.

Analysis and Synthesis.—By the former we separate a concrete or complex object into its parts. In chemistry there is an actual separation of one element from another, say the oxygen from the hydrogen with which it is combined in water. But in most investigations, the separation is in thought. Thus in all bodies we find both extension and energy, which cannot be separated in fact. Thus logicians analyze discursive thought into simple apprehension, judgment, and reasoning, or in the expression of these into the term, the proposition and argument. The process is performed by abstraction, in which we contemplate in thought a part of a whole presenting itself, more particularly an attribute of an object, say gravitation. In analysis we separate the whole into its several parts. Abstraction can be performed on every object, as every object has more than one quality, and we can fix on any one of these. Analysis

can be performed only when we have such an acquaintance with an object as to know all its parts.

The exercise of abstraction, and when it is available of analysis, is required in every kind of investigation. Bacon speaks of induction, commencing with "the necessary rejections and exclusions," that is, the separating of the matter to be investigated from the extraneous objects with which it may be associated in nature. Whately says ("Logic") that in teaching a science, the analytical mode is the more interesting, easy, and natural kind of introduction, as being the form in which the first invention or discovery of any kind of system must originally have taken place. Whewell gives an apt name to the procedure, which he recommends as the "Decomposition of Facts." It serves not only to separate objects from others, but to break them down, so that we may obtain a better acquaintance with them, with their internal structure and their several qualities. It is a process to be employed throughout in all investigations of nature, which in every department is full of complexities.

Analysis can scarcely be described as discovering truth. It is rather a means or instrument toward this end. At the same time, it should be noticed that when we abstract a part, say a quality, from an object, the part, the quality, has a reality as well as the whole. If the concrete be real, the abstract is also real. The abstract may not have an independent reality; thus gravitation has no reality except in body, but it has a reality in body. The criterion here is that the part be really a part of the actual whole, that the quality be a real attribute of a real thing.

Analysis is a sharp and may become a dangerous instrument. It may be over subtle and dissect and kill what should be kept alive and entire. It is fulfilling its end only when, to use an illustration of Plato's, it is dividing the

carcass as the butcher does, according to the joints. Among the ancient Greek philosophers the analytic was the method commonly employed. Down to this last age the analytic and the synthetic were represented as methods of discovering truth, and had large fields allotted to them. Kant's great work, the "Critick of Pure Reason," is divided into the analytic and synthetic parts.

In synthesis the parts are put together to show that they make up the whole. Thus Whately decomposes discursive thought into the term proposition and argument, and then shows synthetically that these make up the whole process. Sir John Herschel, in his "Astronomy," begins with taking up the several departments of the heavens, and then expounds the whole science. The two, analysis and synthesis, must continue to be used as instruments, but they now do so in the methods of induction and deduction.

CRITERIA OF LAWS.—Hitherto we have had to do with individual facts, which tell us nothing beyond themselves. We have not as yet any means of anticipating the future from the past, or gathering wisdom from experience. In particular, we have no science, which consists, not of scattered and isolated facts, but of systematized knowledge. In the construction of science we must co-ordinate the facts. In doing so we discover the laws and find that all mundane affairs are regulated by laws.

But the question arises, How do we from individual facts reach a law? Or, more specifically for our present purpose, When are we entitled to conclude and be satisfied that we have found a law which may be regarded as general or universal? The answer of those who have not thought specially on the subject would be, When we have observed all the facts. But a moment's reflection shows that in most cases, I believe in all, we cannot find out all the facts. We assert that crows are black, but we cannot

go the round of the world and ascertain that it is so. We may have examined millions of cases and found all crows black, but how do we know that a traveller may not report that he has found a white crow in some distant island? In science we say that all mammals are warm-blooded, or that all matter attracts other matter inversely according to the square of the distance; but no one has searched the universe and noticed every mammal and every particle of matter so as to be able to say that no mammal is cold-blooded, and no particle of matter without the power of attraction. But from a limited number of observations we can rise to a law which seems to be universal. How is it so? Mr. Mill maintains that he who can answer this question is wiser than the ancients.

Bacon describes the method of observation by "perfect innumeration" of cases as puerile and incapable of yielding any fruitful results. In induction we have to rise from the unknown to the known. We argue from a limited number of cases in the past to a universal law which we hold to be true in the future, not only so, but in all unknown cases, past and present. The father of inductive philosophy was aware of the difficulty of the problem, and he sought to solve it by bringing in *Prerogative Instances* (*Prerogativæ Instantiarum*) which could determine what is true of all instances. To give only one example, that of *Instantia Crucis*, the metaphor being taken from the notice put up where two roads meet to tell which to take. It was disputed whether light consists of material particles or of vibrations in an ether. To settle this it was maintained by Fresnel that instances can be artificially produced which are inconsistent with the material, but not with the undulatory theory. But we have now better tests in the *Canons of Induction*.

In all such investigations we must take along with us

two grand principles. One of these is the principle of Cause and Effect. I believe this to be an intuitive principle, standing the tests above enunciated. I believe that when we discover anything beginning to be, we look for an antecedent producing it—a substance with power. But without entering at this place on this disputed metaphysical subject, I may take it for granted that the principle of causation is sanctioned by a universal experience, and will not be denied by any one. Many, indeed, feel that the principle may require to be enunciated anew and put in a better form since the discovery of the law of the Conservation of Energy, or the Persistence of Force, as Herbert Spencer calls it. But whatever be the best shape in which to put it, we assume in all induction that causes produce their proper effect, and that every new product or change in an old thing has a cause. One of the aims of inductive science is to discover what has caused a given phenomenon, what has produced it in the past and will produce it again. But we have need to assume more than this.

The second is the principle of the Uniformity of Nature, as it is loosely called. The principle of causation might have reigned in all nature and yet there have been no uniformity. All action in nature might have as its sole cause the fiat of God. The connection of all things would, in this case, be with God, but not with one another. The spring, with its buds and blossoms, would be produced by God, but this would give no security that the fruits of autumn were to follow. Or, again, there might be constant interferences by God with the operation of natural agents; or causal agents might work, and yet there be no such thing as the general laws, such as the seasons, which we observe and trust in. We find, instead, that the agents of nature are so disposed or arranged that they produce uniformities, not the result of any one cause, but of a com-

bination and harmony of causes, such as the periodicity of the heavenly bodies, the flow of the tides, the regular return of the seasons, the plant rising from a seed and producing a seed, the descent of the animal from a parent, its growth and its death. All these imply causation, but they require more—an adjusted causation.

But it is necessary to settle more definitely what is implied in the uniformity of nature which lies at the basis of all induction. It implies first that there is a certain number of agents acting in nature—it is not necessary for us to settle how many. Secondly, that these are so collocated or arranged—I believe, adjusted—as to produce general results called laws, which we observe and act upon and can scientifically express. Thirdly, these agents constitute nature, and there is no introduction of new agents and no interference with them in ordinary circumstances. This statement does not preclude miracles on rare occasions, these miracles not being contrary to the law of causation, for they have the power of God as a cause, but they are simply an exception to the uniformities of nature.

We thus see that there are two kinds of laws sought after in induction. The one, the primary and the fundamental, are the laws of causation. In the inquiry into these, we seek to settle the precise nature of the causes acting—what is the precise nature of the power which keeps the moon in her sphere and makes the apple fall to the ground. Or, having discovered the cause and its nature, we try to find what will be its influence and effect in certain circumstances—how, for instance, gravity will produce tides in the ocean.

CANONS OF INDUCTION.—There seem to be three grand ends which men of science have in view in their investigations. One is to discover the composition of the objects around us; the second is to discover natural classes; the

third is to discover causes. There are canons which guide and guard us in each of these investigations.

I. *Canons of Decomposition*.—Almost all the objects we meet with in the world, whether material or mental, are composite. It is the aim of many departments of science, in particular of chemistry and psychology, to analyze them. This can, so far, be effectively done. There are certain rules to guide us, and these may be made more and more specific as the analytic sciences advance.

A. We must separate the object we wish to decompose from all other objects. If we wish to analyze water, we must have pure water separate from all other ingredients. If we wish to analyze intuition or reasoning, we must separate it from all associated observations and fancies.

B. When we have found the composition of any piece or portion of a substance, we have determined the composition of every other part, and, indeed, of the whole. When we have ascertained that a pint of water is formed of hydrogen and oxygen, we have settled that water everywhere is composed of the same elements. This arises from the circumstance that every substance in nature has its properties which it retains. Having detected these properties in one case, we have found what they are in all.

C. The elements reached are to be regarded as being so only provisionally. We are not sure that in any cases we have found the ultimate elements of bodies. At present it is supposed that there are sixty-four elements, but we are not sure of any one of these that it will never be resolved into simpler substances. Meanwhile the chemical analysis is correct so far as it goes. It will always hold true that water is composed of oxygen and hydrogen, though it is possible that oxygen or hydrogen, one or both, may be resolved into something simpler.

II. *Canons of Natural Classes*.—There are certain sciences

which are called by Whewell classificatory. They are such as botany, zoology, and mineralogy. We may have two ends in view in classifying; one may be simply to aid the memory by having the innumerable objects of nature put into a convenient number of groups. For this purpose we fix on certain obvious and convenient characteristics and put all the objects possessing them into one class. It was thus that Linnæus put under one head all plants possessing the same number of stamens and pistils. This arrangement, though it does not come up to the requisitions of a perfect classification, is found to be very convenient. Second, our object may be to increase our knowledge by so arranging objects that one characteristic may be a sign of others. In natural classification we should always aim at securing both these ends. There are canons which may assist us in determining when we have reached natural classes.

A. We must have observed the resemblance in many and varied cases, say in different countries and at different times.

B. We must be in a position to say that if there had been exceptions, we must have met them. These two rules guard against forming a law from a limited class of facts.

C. There are classes in nature called Kinds, in which the possession of one quality is a mark of a number of others. All classes entitled to be called natural are more or less of this description. Thus, mammals are so designated because they suckle their young; but this characteristic is a mark of a number of others—that the animals are warm-blooded, and have four compartments in their hearts. Reptiles are recognized as producing their young by eggs, but they are also marked as having three compartments in the heart, and being cold-blooded.

These canons guarantee truth. When we are able to place objects in a class, we know that they possess the properties of the class.

iii. Canons of Causes.—The most lucid and, upon the whole, the clearest and most satisfactory exposition of these methods is by Mr. John S. Mill in his “Logic.” It should be noticed that his methods relate to causes, and we have not had from him an exposition of the canons of decomposition and classes as given above. He mentions four or five methods.

A. The Method of Agreement.—In the spring season we see innumerable buds, leaves, and blossoms appearing upon the plants, and we find the common cause to be the heat of the sun shining more directly upon the earth. The canon is, “If two or more effects have only one antecedent in common, that antecedent is the cause, or, at least, part of the cause.” That canon is too loose to admit of a universal application, as we may not be sure that the point of agreement we have fixed on is the only one.

B. The Method of Difference.—In the very middle of the day I find the scene around me on the earth suddenly darkened. There must be a cause. I find that the moon has come between us and the sun, and this seems the only difference between the two states—the one in which everything was bright, and the other in which it is in gloom. The canon is, “If in comparing one case in which the effect takes place and another in which it does not take place, we find the latter to have every antecedent in common with the former except one, that one circumstance is the cause of the former, or, at least, part of the cause.” This method is the one employed in cases in which experiment, with its separating power, is available. It is the most decisive of all tests when the circumstances admit of its application. There are cases in which this

method is not applicable, when a sort of intermediate one may come to our aid.

C. The Indirect Method of Difference, or the Joint Method of Agreement and Difference.—The canon is, “If two or more cases in which the phenomenon occurs have only one antecedent in common, while two or more instances in which it does not occur have nothing in common but the absence of that antecedent, the circumstance in which alone the two sets of cases differ is the cause, or part of the cause, of the phenomenon.” The illustration given by Mr. Mill is: “All animals which have a well-developed respiratory system, and therefore aerate the blood, perfectly agree in being warm-blooded, while those whose respiratory system is imperfect do not maintain a temperature much exceeding that of the surrounding medium; we may argue from the two-fold experience that the change which takes place in the blood by respiration is the cause of animal heat.”

D. The Method of Concomitant Variations.—We want to know the cause of the rise of water in a pump or of mercury in a barometer. The ancients accounted for this by nature’s horror of a vacuum, which is inconsistent with the fact that water will not rise above a certain number of feet in the pump. Torricelli and Pascal gave a better explanation when they referred the rising of the water or mercury to the weight of the incumbent atmosphere, which Pascal proved by ascending a mountain with a barometer, and finding that, as he rose higher and higher, the mercury fell lower and lower in the tube. Here we have the effect varying with its alleged cause, which is an evidence that the alleged cause is the true one. The canon is, “Whenever an effect varies according as its alleged cause varies, that alleged cause may be regarded as the true cause, or, at least, as proceeding from the true cause.”

E. The Method of Residues.—A farmer knows how much grain a particular field has yielded in the past. He mixes manure with the earth on the field, and finds he has a larger crop, and he ascribes the increase to the manure. He knows what the previously existing antecedents will produce, and after subtracting this, he ascribes the residue to the new antecedent. The canon is, “Subtract from an effect whatever is known to proceed from certain antecedents, and the residue must be the effect of the remaining antecedents.”

I do not need here to give anything more than the above general account of these canons, which are fully unfolded by Mr. Mill. I mention them simply to show that when they are applied they settle for us what is truth.

REASONING IN INDUCTION.—The question is started, Is there reasoning in induction? I am sure that there is. From what has been ascertained by observation taken in a wide sense we infer something else—that there is a law which enables us to predict results.

How is it that the countryman is enabled to predict a coming storm? His father has told him, or he himself has observed that when the wind is in the East, and the clouds are thick and black, there will probably be rain or wind. Here there is evidently inference which can be stated syllogistically by the logician, the general observation being the major premise, the particular state of the wind and sky the minor, and the conclusion that there will be a storm. Every class of men, in fact all men, do thus reason on premises implied, though possibly not expressed. The laborer argues, in his own way, that there should be a rise of wages; the merchant purchases because he concludes there will be a demand for his goods. Before there were any precise rules laid down on the subject, scientific men drew true and important conclusions from common-sense principles in their own mind. The canons of in-

duction now expressed definitely enable us to put the reasoning in a more systematic form, which is a great advantage. We can now use the canons of induction (which, I believe, will become more definite and better expressed) as our majors in the syllogism of induction.

Major. When two or more effects have only one antecedent in common, that antecedent is the cause.

Minor. But the budding of innumerable plants in spring has only one common antecedent—the return of the sun to a higher altitude.

Conclusion, this one antecedent *is* the cause.

This is the method of agreement. Let us take a case from method of concomitant variations.

Major. Where an effect varies with its supposed cause, this is the true cause.

Minor. But the rising and falling of the mercury in the barometer varies with the less or greater weight of the superincumbent atmosphere.

Conclusion, the weight of the atmosphere is therefore the cause of the rise or fall of the barometer.

It should be observed that the canons, with their implied reasoning, do not guarantee to us absolute certainty, what is called apodictive truth or demonstration. None of these are certified, as first truths are, by the law of necessity; we can easily conceive any one of the ordinary physical laws not to be true universally, and we might believe so provided we have evidence. The evidence, after all, is merely a probability of a lower or higher degree, but may rise to a certainty only a little short of being absolute, and quite sufficient to justify us to put trust in it and act upon it in ordinary, indeed in all, circumstances. Such, for instance, is the proof which we have in favor of the law of gravitation. It is not demonstrative like a mathematical truth, but it satisfies the mind and is verified by constant observation.

SECTION VI.

THE JOINT INDUCTIVE AND DEDUCTIVE METHOD.

J. S. Mill argues that more progress will now be made even in observational sciences by deduction than by induction. This may be doubted. It seems to me that observation and experiment must always be the surest way of advancing research. But deduction may be joined to induction. When this is done the method may be called the Joint Inductive and Deductive. This is, in fact, the method represented by Mr. Mill as conducting to such fruitful results.

In this method the inquirer begins in the inductive method, that is, he observes facts with care and with the view of discovering a law. As he proceeds he will ever be asking whether the law is so and so, that is, devising an hypothesis. In order to determine whether this is a true law of nature, he has to examine further facts, it may be, facts of a different kind. As he acts thus, he may find he can apply deduction. He inquires what effects follow from the law in his mind, and he then compares these with the facts. If he finds these to correspond, he has a Verification of his Hypothesis. It is by combining the two in this way that the greater number of the established laws of nature have been discovered. In some cases there have been long processes, both of induction and deduction, before the law has been ascertained and adjusted. When the laws of nature are quantitative, as they commonly are, mathematics may be applied to them, and it becomes the instrument of the deduction, and often a far-reaching one, showing very distant consequences which can be compared with facts.

In the sciences of observation sometimes the inductive

element and sometimes the deductive method is the more prominent; in all cases the inductive, as I reckon, is the essential. In Galileo's researches experiment was the main instrument, but he also used mathematics. Kepler's fertile mind was always devising hypotheses, but he accepted them only as they were confirmed by observations. It would be wrong to say that Newton's method was mere induction. He had before him the observations of Galileo and Kepler, and also a measurement of the distance of the earth's surface from the centre, and he applied a powerful mathematics, created by himself, to these facts. It is a circumstance greatly to his credit that when, on having a wrong measurement of the distance of the earth's circumference from its centre, he found his theory that the moon was held in her sphere by the same power as draws an apple to the ground not in accordance with facts, he gave it up for a time, and only resumed it when it was found, on the proper distance of the earth's distance being ascertained, that the facts corresponded. In all departments of physics or natural philosophy the deductive mingles with the inductive. In optics, in thermotics, in theoretical astronomy, in mechanics, the deductive or mathematical element has a conspicuous place; but in all these sciences we have always to start with observed facts. In ethics we carry out indefinitely the laws of our moral nature; but these have been ascertained by a previous observation of that nature. In like manner, in logic we deduce consequences from the laws of discursive thought, which we have found by observing how they act in the mind. In all the social sciences there is a mixture of the two elements, sometimes the one and sometimes the other being the more predominant. Jurisprudence is forever appealing to fundamental principles, and inquiring how they apply to a given case. The science of national wealth must be

constructed mainly by the observation and collection of facts, in statistical and other forms ; but there are universally operating principles ever called in. Thus it is supposed that men are usually swayed by a desire to promote their interest so far as they know it. This is certainly a powerful motive. But there are others, such as the desire for fame, for power, for society, for the beautiful, for the promoting education and religion, all actuating individuals, and the influence may be traced in the progress of nations. In chemistry the laws have to be ascertained by observation, particularly by experiment ; but when principles have been discovered, such as that of affinity, they may be carried out indefinitely. Psychology, as a science, is constructed mainly by the observations of consciousness ; but having ascertained certain laws, such as those of the association of ideas, we can explain how they affect our beliefs and feelings. In pedagogics, or the science of teaching, we must carefully observe the ways of children ; but, in doing so, we discover their actuating motives, such as the love of knowledge, the love of play, the love of approbation, which have to be taken into account in constructing our methods of instruction and discipline. In æsthetics there are ascertained laws of taste which must be taken along with us in the construction of the science. In all departments of natural history, observation must play the most important part ; but there are laws of life and of form to guide biologists in all their investigations.

The principles from which we deduce conclusions are of two kinds. Some are self-evident or demonstrative. Such are moral laws and maxims. These are assumed, and are applied extensively and constantly in history and in all the social sciences, in all sciences which deal with motives and character. Of this description is the maxim that men are likely to be happy and comfortable when

they are moral. To this same class belong all mathematical propositions founded on axioms. These self-evident truths are seldom formally enunciated, they are simply assumed and applied. So far as science uses them, it is very much employing the joint Dogmatic and Deductive method. But there is a second kind of principles used in deduction even more extensively; these are acknowledged truths and wise saws established by a large induction. For example, any one may now assume the law of gravitation. In optics it is allowed that the angle of reflection is equal to the angle of incidents, and from this a great many particular truths may be drawn. In chemistry it is taken for granted that the elements combine in certain proportions, and from this a multitude of consequences follow.

In this joint method the induction is tested by the canons of induction and the deduction by the rules of reasoning.

HYPOTHESES AND VERIFICATION. CONSILIENCE OF INDUCTIONS.—"Hypotheses non fingo," said Newton, meaning, perhaps, that he introduced no fictitious agency, but merely *veræ causæ*, such as existed in nature; or, more probably, that he accepted no truth till it was established. Since Newton's time, especially within the last age, hypotheses have played a very important part in all departments in which the laws have not been settled, as, for example, in electricity and biology. The investigator is bent on knowing what laws certain phenomena follow. But in nature divers agents are mixed up with one another, and we cannot determine what they are by a loose inspection. As he observes tentatively, he makes a supposition suggested by the facts as to what the law should be. When he notices the descent of plants and animals, he says to himself, Let us suppose the law to be that of development or heredity. He has now a specific end to work for, and he observes

and collects facts, and inquires whether they agree with the hypothesis he has formed. If he finds that many of them do so, he has a probability, and is encouraged to proceed; and if the hypothesis explains a large body of events it rises to the rank of a theory. When it takes in all the facts bearing on the particular case, and no exceptions can be discovered, it is regarded as a law of nature, which, however, may require to be modified and adjusted before it suits all the facts, and so becomes the true law. This process is called

The Verification of Hypotheses.—When first suggested the supposition may have little to support it, and there may seem to be facts opposed to it. But if it is the correct one, there will come confirmations from a variety of quarters, difficulties will disappear, and the seeming exceptions may corroborate it. The hypothesis started is that light consists in vibrations, not a very probable supposition beforehand, but then it is found to explain one set of phenomena after another, till at last it seems to account for everything, and is counted as an established law. Or the hypothesis is that of the conservation of energy, or that the amount of energy in the world, real and potential, cannot be increased or diminished. On the first consideration of this view, obvious objections will present themselves. We strike with a hammer upon a piece of iron till our strength is exhausted, and it looks as if force had been expended and lost. But, on further inquiry, we detect the energy that had gone out of the body to be conserved in the molecular motion or heat of the metal.

Hypotheses, I rather think, must be resorted to in the early stages of the investigation of every sort of phenomena. They are simply tentatives, and most of them may have to be abandoned. They may or they may not be announced: they may, in the first instance, be simply

guesses, and only a few or one of them prosecuted to any great extent. The law of gravitation was for a time only an hypothesis, taking the erroneous form that matter attracts other matter, not according to the square of the distance, which is the true law, but according to the distance. Hypotheses are necessary, but are to be carefully watched and limited.

First.—The hypothesis must be suggested by the facts and not be feigned by the mind; this may be the meaning of Newton.

Second.—It must be regarded as a mere hypothesis till it is established by the criteria applicable to the department. We are much troubled in the present day by hypotheses being represented as established laws.

Third.—The hypothesis is to be abandoned when it is found that there are facts inconsistent with it. It requires much courage to abandon an hypothesis which has long been cherished and perhaps published to the world.

Fourth.—It is established as a law when it explains all the phenomena bearing on the subject and is not contradicted by any known fact.

It is a powerful confirmation of an hypothesis when it enables us to predict occurrences. If the alleged law be the true one, the facts will correspond to it in the future as in the past, and as they fall out will tend to prove that the hypothesis is a sound one. Dr. Whewell has shown that the evidence in favor of our induction is of a much higher and more forcible character when it enables us to explain and determine cases of a kind different from those which were contemplated in the formation of our hypothesis. "Thus it was found by Newton that the doctrine of the attraction of the sun, varying according to the inverse square of the distance, which explained Kepler's third law of the proportionality of the cubes of the distances to the

squares of the periodic times of the planets, explained, also, his first and second laws of the elliptical motion of each planet, although no connection of these laws had been visible before. Again, it appeared that the force of universal gravitation, which had been inferred from the perturbations of the moon and planets, by the sun, and by each other, also accounted for the fact, apparently altogether dissimilar and remote, of the precession of the equinoxes." He designates this process as the Consilience of Inductions. He declares: "No example can be pointed out in the whole history of science, so far as I am aware, in which this consilience of inductions has given testimony in favor of an hypothesis afterward discovered to be false."

SECTION VII.

CHANCE.

In one sense there is and can be no such thing as chance, that is, an event without a cause or without a purpose. Every occurrence has a cause in God. Not only so, but in the ordinary affairs of this world it has a mundane cause. Further, it falls out according to the uniformity of nature.

But there are senses in which there is a chance in our world. The oldest definition of chance (*τύχη*) was by Anaxagoras, who makes it an event whose cause cannot be discerned by human reason (*λογισμῶ*). This account needs only to be a little expanded and made more definite. There are occurrences of which the cause or the law is unknown, and, in consequence, we cannot anticipate their occurrence. This may arise from the cause being utterly unknown to us. More frequently it arises from the com-

plexity of nature, from there being a number of agents working, or from the nature of their operation. We may know all the agencies at work, but we cannot tell how they are working. In all cases the events do not recur with such regularity as to constitute a law. There was a time when eclipses were regarded as coming according to no law, and men, following the law of causality, referred them to a deity. When these causes were discovered they were found to have periods, and astronomers could predict their recurrence, and they were viewed in a different light. Till lately meteors were supposed to appear capriciously, but now showers of them are expected at certain seasons of the year, and nobody ascribes them to chance. When we shake a die in a dice-box, we are acquainted with the mechanical law which it obeys in its movements, but we cannot say which side will cast up. We know, in a general way, what physiological agencies produce death, but we cannot predict at what precise time any man will die.

Still, even in such cases a certain kind and amount of truth may be had, and this from the circumstance that the event proceeds, after all, from causes which operate regularly and from there being a limited number of causes. We find that, given a sufficient number of trials, each side of the die will come up the same number of times; if any side comes up more frequently than another, we argue that the dice have been loaded. We do not know when any one man will die, but we can ascertain what number of people will die in a given time in a community.

In such cases we can strike an average, and we can foretell average results and estimate the probability of a given event. When we speak of the probability of an occurrence, we are not to understand this as implying the uncertainty of the occurrence considered in itself. The event, say the death of a person on a certain day, may be abso-

lutely sure, owing to causes operating. We can conceive that there are higher intelligences to whom it would not be uncertain. We are sure that it would not be so to the view of the Omniscient. It is so to us because of the limited nature of our faculties and of our knowledge of the causes operating. Were we cognizant of all the antecedent circumstances we might in many cases be able to predict the result. It is because of our ignorance that the event is uncertain to us. The probability or improbability is not in the event which we have for expecting it; it is subjective and not objective.

In all cases we must have certain data gained by observation and yielding a general average. In some departments we can express numerically the probability or improbability of the particular occurrence. An event reckoned impossible may be represented by 0, an event certain to happen by 1. All degrees of probability may be denoted by the fractions representing value from zero to unity. The probability of an uncertain event is represented by the number of chances favorable and unfavorable. Thus the casting up of a head or a tail being 1, and the chances against it being 2, the proper chance is one-half. The tables that have been prepared for life insurance companies have been very elaborate, but need not here be given.

There is another sense in which it may be said that there is such a thing as chance. There cannot be an occurrence without a purpose on the part of God, who has ordered the causes producing it. But there may be a concurrence without a design. It is by chance that certain rocks take the form of the face of Napoleon or Wellington. I do not know that there was any purpose designed or effected by so many men of genius being born in the year 1759, or by Cervantes dying on the same day as Shakespeare

died. There are certain minds that take the keenest interest in observing such coincidences and discover a deep meaning in what is in itself meaningless ; for example, connecting a calamity with the spilling of salt at a table, or from thirteen persons meeting at that table. On the other hand, when there is an immense congregation of agents that are independent, to produce an evident benevolent end, for instance, of vibrations of light of coats, and humors, of rods and cones, to enable us to see through the eye, there is evidence of design, the chances being all against such a concurrence.

SECTION VIII.

PSYCHOLOGY.

Here, as well as in all the physical sciences, we have to begin with the observation of facts. There is, however, an important difference between the two departments. The facts in physical science are obtained by the senses ; whereas, in mental science, the observing agent is self-consciousness. It is only thus we can find out what any psychological act is. An examination of the nerves and brain may show how a mental state arises, but can give no idea of the mental act itself, say of a sensation, a recollection, an imagination, of moral approbation, of emotion or wish. But in making consciousness our witness we have to allot to it a large province. We must include in it not only immediate introspection, but also the observation of the mental acts of others, as disclosed in their words, their writings, and their deeds. We cannot, indeed, look directly into the bosoms of our fellow-men so as to ascertain what is passing within, but we can gather what this is by the

expression of it, which, be it observed, we can understand because we are conscious of our own acts. History, biography, travels, plays, novels, newspapers, and especially conversation and familiar letters, may all show us human nature quite as much as they do external incidents. Without these supplements we should have a very contracted view of the mind by inspection of our own souls.

The individual facts are made known in this way. The criterion of consciousness is in itself, it is self-evidencing. As we observe the facts we distinguish between those that differ and co-ordinate them into laws. The criteria of the laws are much the same as those of physical science.

Psychology proceeds on the same two fundamental principles as physics. It is seeking for causes. Without determining the question of the freedom of the will, we may confidently affirm that causation, that the persistence of force, rules in the mind as it does in the body. Certain antecedents are sure to be followed by certain consequences. The orator urges the considerations which may persuade those whom he is addressing and lead them to action. The poet raises up images that please and elevate the mind. The father and the teacher inculcate principles which may guide the young in all their future lives. Investigators in this department have been seeking to discover faculties and the rule and mode of their operation. The early Greeks found sensation, the discursive power, and reason. Aristotle had in the soul the nutritive power sensation, memory, phantasy, and above these, the reason, active and passive. In all ages there has been a grand distinction drawn, in a loose form, between the intellect and the will, the cognitive and the motive powers. Everybody talks of the memory, the judgment, of reasoning, and of sentiment and feeling, of the power of abstracting, generalizing, distinguishing, of loving and of hating.

There seem, also, to be laws of uniformity in nature. It does not appear that in the association of ideas one idea is the cause of that which succeeds; that when height suggests hollow, and the dwarf suggests the giant, and prosperity, adversity, and a portrait the original; that when we count up from one to one hundred, there is a causal connection between the ideas—they are the joint effect of a number of causes. In the science of psychology we seek to discover these laws, such as the law of habit, the connection between the idea and the feeling raised by it, the kind of acts which conscience approves of.

Now, there may be criteria of these laws, both of causation and uniformity. These have not been so carefully enunciated as those of physical science. I believe that, *mutatis mutandis*, they may be considered as very much the same.

The Method of Agreement.—Washington is named, and we find the mind following a certain train. We think of his education, his training, the revolution, his battles, his character, all of which have been previously in the mind together, and we reach the law of contiguity, that when ideas have been in the mind at the same time, when one comes up the others are apt to follow.

The Method of Difference.—We see a portrait of Washington for the first time. The two, the portrait and Washington, were never before in the mind together, yet the portrait calls up Washington, and the law is, things that are related, especially things that are like, recall each other.

The Joint Method of Agreement and Difference.—There are days in which we find that we can easily recall the things we would remember, other days in which they will not come up. The difference is in the time: that in the first few days our brain was in perfect health; in the

other we had a headache, and we discover that the state of the brain affects our associations.

Method of Concomitant Variations.—When we are interested in an event known to us, we are apt to think of it more frequently, and we conclude that feeling, as a secondary law, influences our associations, and according to the feeling with which it is accompanied, so do ideas come up.

Method of Residues.—On contemplating kind actions, we feel a pleasure which can be explained by our social feelings; but we find that on contemplating some of these we have a feeling of moral approbation. This cannot be explained by the mere social feeling, and we have to call in a moral principle.

SECTION IX.

NATURAL THEOLOGY.

Attempts have been made to conduct this science on the joint dogmatic and deductive method, but, in my opinion, without much success. It has to deal with facts, the existence of God and the immortality of the individual soul, and therefore must have an inductive or observational element. I have my doubts whether, from a mere idea or principle in the mind, we can argue the existence of the living God. It should proceed, I reckon, mainly in the joint inductive and deductive method. It looks at God's works within and without us, and, discovering wonderful mutual fittings, means and end, traces of love and just government, it rises to the belief in a being of power, wisdom, benevolence, and justice. The inductions are collected in such works as Ray's "Wisdom of God," in Paley's

"Natural Theology," in the Bridgewater treatises, and the ordinary works of natural religion.

But there are deductive processes involved. The premises here are supplied mainly by *à priori* principles or by intuition, all to be justified by the criteria of First Truths. In the mind of man there are high and deep truths in the germ, all capable of being developed and actually working in the mature man, being called forth by the circumstances in which he is placed. There is the principle of causation, requiring us, on a new thing or a change appearing, to seek for a cause. This can stand the tests of intuition, being self-evident, necessary, universal, in our very nature and constitution, and it leads us to believe that where there are traces of design there must be a designer. There is a moral power within us, with its law and its obligations, implying a law-giver. We have not an adequate idea of infinity, but we believe that there is something beyond our widest idea or concept, something to which nothing can be added, and we are led to apply it to the powerful, the good and holy One.

We are entitled, we are required, to trust and follow these principles. They are elements and the highest elements of the reason with which we are endowed. We begin with trusting the senses, and find, as we do so, constant confirmations in our daily experience; what appeared at first to be realities we discover to be more real as we bring one sense after another to bear upon them, and find that meat nourishes us and pure air refreshes us, and the due use of the good things of this world prolongs life. We should confide in the same way in our higher ideas and beliefs, and as we do so we find them expanding and elevating the mind, opening grand vistas which look beyond the seen and temporal into the unseen and eternal. If we do not follow our lower instincts, if

we do not eat and drink, our bodies will become feeble and die; and if we deny our higher reason, our souls will lose their freshness, vigor, and aspirations.

But when we would construct the argument, indeed, in all scientific investigations and in all true philosophy we must be careful to ascertain the exact nature of the intuitions or intuitive reason we call in, and only use them accordingly. Those who neglect this are sure to present them in an extravagant form or make a perverted use of them. This has been done by the mystics of the East and of mediæval times, indeed, of all ages. Almost always they have got a glimpse of a reality, but they have seen it only under partial aspects, and they have shown it to us through a cloud, or irradiated it with reflected light, and have represented it to us as vision, inspiration, and ecstasy, whereas it is only one of the higher elevations of our nature.

All our profound thinkers have seen these truths, but have not always properly represented them. We may hold with Plato that there is a grand, indeed, a Divine idea; but I wish that idea, as in the mind, carefully examined, and its forms or law exactly determined, and it is for inductive science, and not speculation, to tell us what are the types which represent it in nature. I hold with Aristotle that there are formal and final as well as material and efficient causes in nature; but it is for a careful induction to determine the nature of these and to show how matter and force are made to work for order and for ends. I am as sure as Descartes, and as Augustine and Anselm were before him, that there is in the mind a germ of the idea of the infinite and perfect; but we must show what is the precise nature of the idea, so as to secure that we draw only legitimate inferences from it. I discover, as Leibnitz did, a pre-established harmony in nature, but it

consists mainly, not in things acting independently of each other, but in the harmony produced by things acting on each other. I attach as much importance to experience as Locke did, but I maintain that observation discovers that the intuition (which he acknowledged) looks at principles in the mind prior to all experience. I allow to Kant his forms, his categories, and his ideas, but their nature is to be discovered, not by criticism, but by induction, when they will be found not to superinduce qualities on things, but simply to enable us to perceive what is in things. I believe with Schelling in intuition (*Anschauung*), but it is an intuition viewing realities. I hold with Hegel that there is an Absolute, but I believe that our knowledge, after all, is finite, implying an infinite, and that the doctrine can be enunciated so as not to issue in pantheism. I turn away with scornful aversion from the pessimism of Schopenhauer and Von Hartmann, but I believe they have done good by calling attention to the existence of evil, to remove which is an end worthy of the labors and sufferings of the Son of God. I believe with Herbert Spencer in a vast unknown above, beneath, and around us, but I rejoice in a light shining in the darkness and revealing the known. I believe in the gems so rich and varied which the higher poets have left us as a rich inheritance; but before they can enter into philosophy they must be cut and set, and it will require a skilful hand to adjust them, and when they are cut it must be as skilfully as diamonds are, and this only to show more fully their form and beauty.

SECTION X.

THE SUPERNATURAL.

We have to posit the Supernatural as the origin of the natural. This we do on the principle of cause and effect. We discover in nature evidences of its being an effect. It has, as Sir John Herschel says, the appearance of "a manufactured article." This is seen particularly in the adaptation of one thing to another all throughout nature. We argue a cause above and beyond nature, and this is Supernatural.

Miracles.—It is asserted that in the very midst of the natural occurrences there are events which cannot be accounted for by natural agents. These are called miracles. Of most of these, when we examine them, we find that they cannot stand our criteria; they are the products of superstitious fears and of credulity. But there are events recorded in the Old and New Testaments which are worthy of having the tests of truth applied to them. These are not to be regarded as occurring without a cause. They are not inconsistent with the intuitive conviction of causation. They have a sufficient cause in that power in which nature originated. We are only following out the principle of causation in arguing thus. We rise to a supernatural cause because there is no agent in nature adequate to produce such occurrences as the resurrection of Lazarus or Jesus.

I would not describe miracles with Hume, as "violations of the laws of nature;" but they cannot be accounted for by these laws. They do not fall in with that general fact that every event has not only a cause in God but a cause in a physical agent. As physical agents cannot produce them, we argue that they are effected by the immediate power of God. Further, they are

not in accordance with the uniformity of nature. It is not in conformity with this that fishermen and mechanics of Galilee should produce our Lord's discourses. They accomplish their ends, in guaranteeing revealed truth, because they are above the causes and laws of nature.

The evidences of Christianity are of two kinds: one internal and the other external. The external are facts attested by witnesses, whose depositions are to be tested by the criteria of testimony. The others are those derived from the suitableness of the truth revealed to our nature, moral and spiritual, to our sinful state and our wants. Take the Sermon on the Mount as so conformable to our moral nature. Take the life and character of Jesus, so perfect, so full of love in a world of sin and selfishness. Take his sufferings and his death, so fitted to accomplish their avowed end, that is, make atonement for sin.

There is proof of a uniformity of laws in nature, not from intuition, but the combined result of the experience of all times and countries. But it can be shown that there is a like uniformity in revelation, in its types, its prophecies, its doctrines. Its miracles are of a certain kind. Those of our Lord were mostly the healing of diseases, the cure of evils. Each one is part of a system; each part bearing up the others and the whole. By the one uniformity we are sure that every event is according to law. By the other we find a conformity in a whole supernatural system.

SECTION XI.

CONCLUSION—LIMITS TO HUMAN KNOWLEDGE.

The aim of this treatise has been to show that the human mind is capable of reaching knowledge, and that it has tests to determine when it has done so. I have faced the agnostic, but have not entered into a wrestling with him, which would be endless, because he refuses to take a form by which I may lay hold of him. I have pursued a more effectual method. I have shown objects where he assures us that there is nothing. It is in this way we can command assent and gain assurance.

I have proceeded on the idea that there is a difference in the certitude of truths. Some I have shown are self-evident, necessary, and universally held, and therefore certain beyond doubt or dispute; others are only probable, some with only a slight balance in their favor, others rising to certainty. This is not so much a difference in the truths as a difference in the evidence to us. To God and to higher beings, the one kind may be as certain as the other. We cannot tell whether there will or will not be a good harvest next year. But to Omniscience it may be as certain that there is to be a good harvest as that all the angles of a triangle are equal to two right angles. It is of vast moment that we should know what kind of evidence we have, and what the validity of the evidence which we have in favor of any proposition we are required to believe, whether it is demonstrative or merely probable, and if only probable, what the degree of probability. It is also of moment that we should note what kind of truth admits of apodictic and what of only probable proof. It is vain to seek for demonstration in every kind of investigation. We can have such, as I reckon, only when we have

self-evident truth. But, then, it can be shown that inductive truth can rise to certainty. I doubt much whether we have immediate evidence of the existence of God as we have of the existence of ourselves. But we have quite as valid proof of the existence of God as we have of the existence of our fellow-men; in both we have a fact, the acts done, and we rise up by the principle of causation to a cause. The criteria of truth which I have been furnishing should assist us in all such investigations.

Man's knowledge is increasing and must continue to increase. His generalizations widen as his knowledge increases and take in more and more objects. He is constantly gaining more premises which lead to farther conclusions. One discovery leads on to another; one chamber opened shows us the door which opens into a second. Davy proved the correlation of electric and magnetic forces, Oersted of electric and magnetic, and at last the grand doctrine disclosed itself to a number of investigators, particularly to Mayer, that all the physical forces are correlated.

But man's power of discovering truth is and ever must be limited. First, there are limits to his mental powers. He has only five original inlets of knowledge into the material world. Had he fifty senses instead of five he might know vastly more. Then, his power of working on the materials required by sense and consciousness, his memory and his understanding, are also limited. Some men can discover more truth than others, and it is conceivable that there may be higher intelligences who see farther into the nature of things than the most far-sighted of men. Secondly, every man's individual experience is limited, and the same may be said of the experience of the race—it is confined within very stringent bounds.

Man can discover a vast amount of truth, speculative

and practical. We have enough revealed to exercise our faculties, to expand and elevate the mind, and to serve for all the purposes of the duty we owe to God, to ourselves, and our fellow-men. Every truth known leads, however, into the unknown. But this is to tempt us to penetrate into the unknown region that we may know it.

As we do so we shall find that there are things beyond our ken in a region beyond, above, or beneath us, and we must be content to allow them to lie there. We know as much as to know that there are truths which we cannot know. We see the objects within our proper range of vision, but we also see the darkness that encompasses them. "We know in part." Yes, we know, but we know only in part.

We who dwell in a world "where day and night alternate;" we who go everywhere accompanied by our own shadow—a shadow produced by our dark body, but produced because there is light—cannot expect to be absolutely delivered from the darkness. Man's faculties, exquisitely adapted to the sphere in which he moves, were never intended to enable him to comprehend all truth. The mind is in this respect like the eye. The eye is so constituted as to perceive things within a certain range, but as objects are removed farther and farther from us they become more indistinct, and at length are lost sight of altogether. It is the same with the intellect of man. It can penetrate a certain distance and understand certain subjects, but as they stretch away farther they look more and more confused, and at length they disappear from the view. And if the human spirit attempts to mount higher than its limited range, it will find all its flights fruitless. The dove, to use a well-known illustration of Kant's, may mount to a certain height in the heavens; but as she rises the air becomes lighter, and at length she finds that she

can no longer float upon its bosom, and should she attempt to soar higher her pinions flutter in emptiness, and she falters and falls. So it is with the spirit of man: it can wing its way a very considerable distance into the expanse above it, but there is a boundary which if it attempts to pass, it will find all its conceptions void and its ratiocinations unconnected.

Placed as we are in the centre of boundless space and in the middle of eternal ages, we can see only a few objects immediately around us, and all others fade in outline as they are removed from us by distance, till at length they lie altogether beyond our vision. And this remark holds true not only of the more ignorant, of those whose eye can penetrate the least distance; it is true also of the learned; it is perhaps true of all created beings that there is a bounding sphere of darkness surrounding the space rendered clear by the torch of science. Nay, it almost looks as if the wider the boundaries of science are pushed, and the greater the space illuminated by it, the greater in proportion the bounding sphere of darkness into which no rays penetrate, just as (to use a very old comparison) when we strike up a light in the midst of darkness, in very proportion as the light becomes stronger so does also that surface dark and black which is rendered visible.

ENERGY

EFFICIENT AND FINAL CAUSE

BY

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ENERGY.

EFFICIENT AND FINAL CAUSE.

INTRODUCTION.

THE principle of cause and effect is involved in most of the processes by which we discover truth. True, there are verities which are perceived by intuition, that is, in looking upon the objects, such as that I exist and that material things exist. But it is only a small portion of our knowledge that is obtained by primary and direct inspection. In the case of other and derivative truths causation is implied, if not in the whole, at least in the greater number of them.

The principle has a place in the great body of our convictions as to the past. I do not see that it has any part in memory which is instinctive, but it has in all those which we reach by a process. Thus, we believe that there has been a battle at a certain place, a flood at a particular spot on a river, a fire in a dwelling, because we discover effects, which we argue imply a cause. Thus, we argue that certain strata in the earth's surface are the deposits of an ancient ocean, and that other portions have been thrown up by a volcano. Even in regard to events which we believe on human testimony, we assume that the actors have been swayed by the same motives as men now are.

It will be allowed more readily that our reasonable ex-

pectations as to the future depend so far on this principle. We argue, whether we are conscious of it or not, that the causes now operating in physical nature and in men's minds will act in the future as in the past; that these colleges and schools will continue to produce a high mental cultivation; that these improved modes of agriculture will produce a richer crop, and that the abuses in certain old countries will, in the end, produce a revolution like those of France and America.

The principle is involved in the common arguments for the existence of God. True, those who believe with Schleiermacher that God is perceived by direct intuition do not need this premise. But the proofs commonly urged, for example, that from the adaptation of one thing to another to accomplish a good end, and that from the high ideas in the mind of the infinite the perfect proceed, as has been shown by Kant, on the principle of causation; these collocations and aspirations imply a designing mind to produce them.

Causation is thus one of the bonds which connect the present with the past and the future, and the whole with God as the Great First Cause. If this be so, it is surely desirable, it is indeed of vast importance, to have the nature of cause and our belief in it accurately unfolded, and brought into consistency with modern science. David Hume, in establishing his philosophical scepticism, labored with all his might to loosen the causal connection. In the defence of truth this principle comes next in order to that of the Criteria of Truth.

SECTION I.

PHYSICAL CAUSATION.

THE subject will be made clearer by carefully distinguishing Causation Objective and Subjective: that is causation in itself whether we observe it or no (a spark will kindle gunpowder without our taking notice of it), and the principle in the mind which leads us believe in it.

I am not singular in holding that the whole subject of Cause has become confused in the minds of men, especially educated men, and that the time has come for reconsidering it in the light which recent investigation furnishes. In our day two or three doctrines have been propounded and, I believe, demonstrated, which require us to review and revise the doctrine of causation, more especially in its relation to Force, Energy, and Power.

I.

THERE IS A DUALITY OR PLURALITY IN CAUSATION, that is, there are two or more acting bodies in all physical causes. There were thinkers who had a glimpse of that doctrine from an old date. Aristotle spoke of a *συναίτιον* which Sir W. Hamilton translates Concause.¹ But this truth was first clearly enunciated by Mr. J. S. Mill (*Logic*, Book IV., Chap. V.). "The statement of the cause is incomplete unless in some shape or other we introduce all the conditions. A man takes mercury, goes out of doors,

¹ Sextus Empiricus speaks, III. 15, of *συναίτιον, συνεργόν, συνεκτικά*, all pointing to joint action.

and catches cold. We say, perhaps, that the cause of his taking cold was the exposure to the air. It is clear, however, that his having taken mercury may have been a necessary condition of his catching cold; and though it might consist with usage to say that the cause of his attack was exposure to the air, to be accurate we ought to say that the cause was exposure to the air while under the effect of mercury."

The doctrine had occurred to me before I read Mr. Mill's "Logic;" but as he published it first, I do not claim any credit in it. As approaching it, however, from a somewhat different direction, I believe I can make it more explicit and comprehensive. In all physical action there are two or more bodies, molecular or molar; at the present stage of science I ought to add that the body may be the ether in which the undulations of light take place. Now the cause—by which I mean that which invariably has produced the effect, and will invariably produce it—consists in the mutual action of two or more bodies; that is, their action on each other. Thus, in the case adduced by Mr. Mill, the true cause of the effect, the cold, was not the air alone or the body alone, but the air and the body under mercury. Without the concurrence, or rather the joint action of the two, the effect would not have been produced. It is the same in all other cases. A ball at rest is struck by a ball in motion; the one ball is made to move, the other has its motion stayed; the cause consists of the two balls in a certain state, and the effect the balls in another state. A picture-frame falls from a wall and breaks a jar standing on a table below; we say that the frame, or rather the fall of the frame, was the cause of the fracture of the jar. But the true cause, that which forever will produce the same effect, is the frame falling with a certain momentum and the brittleness of the jar.

Had the frame come down with less violence, or the jar been stronger, there might have been no breakage. In most cases of action a considerable number, in some a vast number and variety of agents combine to produce the result. Take the sprouting of a flower in spring: in the cause there are the increased heat and light of the sun, the state of the plant in the earth, and the state of the soil. Without the concurrence of all these the effect would not be produced.

II.

SECONDLY, THERE IS A DUALITY OR PLURALITY IN THE EFFECT. This is a further truth which Mr. Mill has not expounded, but which occurred to me as I was thinking out the doctrine which Mr. Mill preceded me in unfolding. It follows from Mr. Mill's doctrine when it is properly understood, and seems to me to be quite as certain, and it is fully more important and of wider range in its applications. Thus, in Mr. Mill's illustration the cause was the state of the atmosphere and the body as affected by mercury; the effect was the same atmosphere insensibly changed in temperature, and the body under a cold. In the second case the true cause consisted of the two balls, one in motion striking the other at rest; the effect (which would be forever produced by the same cause) the ball which was at rest moving and the ball which was in motion at rest. In the third case the cause was the picture-frame with a certain momentum striking a jar of a certain structure; the effect was the frame losing part of its momentum and the jar broken. In the case of the plant germinating there must have been in the effect changes—it may be incapable of measurement—in all the agents acting as the causes in the sun's heat and light absorbed in the earth and in the plant sprouting.

Taking these views with us, it may be of great use to have appropriate and definite phrases to express them. The word Cause, that which invariably produces the effect, should be reserved for the combination of agencies producing the result. The cause of the man's taking cold is not merely the cold atmosphere or his frame being affected by mercury, but in the two acting on each other. The word Effect should in like manner be applied to the combined result, and comprises the change in the air as well as the colded affection of the body. In the other illustrative cases it implies the movement of the one ball and the staying of the other ; the loss of momentum in the picture-frame as well as the breaking of the jar ; and the change in the rays of heat and light coming from the sun as well as the germinating of the plant.

As causes are dual or plural, it is proper to have phrases to express the parts. The law is often stated that the same cause always produces the same effect in the same circumstances. But in order to clearness and accuracy it is essential to specify what are the circumstances ; it is in fact necessary to put them into the cause, as without them the effect would not follow. In order to the germinating of the flower there is not only the state of the plant and soil, but the additional heat of the sun. All the acting parts may be called agents or agencies, without specifying what they are. They are bodies in a certain state acting on other bodies.

Very often one of these agents is more important in itself, or in our estimation, or for our present purpose, than the others ; this is designated pre-eminently the cause, and little or no evil may arise from this provided always that it be understood that this agent needs one or more co-operating agents which are parts of the full cause. If it be said that the cold air was the cause of the man being

colded, it was because his body was disposed toward such an issue by mercury. It is not easy, or perhaps even possible, to lay down a rule as to which of the agents should be called the special, the main, or the prominent cause, for the cause consists in the mutual action of the whole. When man is working he often calls in one agent to produce an intended effect. If he wishes to kindle a heap of straw, the agent he attends to is the fire he applies; if he wishes a good crop from his ground, he looks to the manure; if he wishes to be cured of a disease, he selects his medicine; though in all such cases there is need of co-operation in the state of the straw, or of the ground, or of his bodily frame. In nature there is often one agent that is particularly potent. When a tree is struck by lightning it is the electricity that is specially noticed, though the structure of the tree had also to do with the effect produced.

Fixing on the agent that is most prominent in itself or in our eyes as the cause or special force, then the co-operating agent may be called the *Occasion*. This phrase is specially applied to circumstances which cast up to call forth a power into exercise, or to work along with causes steadily operating. Thus, that ill-constructed house fell on the occasion of a storm arising. I was prompted to write a letter to a friend by my affection; but the occasion was his suffering a severe loss; the two actually called forth the letter. Malebranche was the philosopher who brought the phrase "occasional cause" into general use. He represented the will of God as the true cause of all creative action, but the volition of man might be the occasion of the forthputting of the Divine Power. Thus, when I move my arm the true cause is the Divine Will, but my purpose is the occasional cause. In such a case we may allowably give a prominence to the Divine Power, but it should be noticed that while one of the agents is the important one, the

other or others, the action of the brain and nerves, are necessary to the production of the precise consequence, which will not follow without the co-operation.

We are thus enabled to give a philosophical explanation of what is meant, or rather what should be meant, by *Condition*, a phrase so often used vaguely and illegitimately in the present day in its application to physical operation. In order to be rid of an agent or to drive it into a corner, it is said that it is simply a condition. In order to the production of a given effect, a certain agent is fixed on as producing an end, the other or others are represented as simply conditions. As proving design we show that animals with a stomach for digesting flesh have also claws and strong muscles to catch and hold their prey. But an attempt is made to do away with the force of the argument by urging that these adjuncts are merely the conditions of the machine working. But properly understood the argument lies in the circumstance that the co-operating conditions have met. The presence of strings in a harp is a condition of it producing music, but the evidence of design is in the presence and combination of the necessary strings.

We may legitimately and conveniently use such phrases provided we understand them ourselves and let our readers or hearers understand what we mean by them. But it should be distinctly explained that all the agents acting, whether circumstances, occasions, or conditions, constitute the cause without which the effect would not follow.

It is needful to make like explanations and come to the same understanding as to the Effect. In all cases of physical action the effect is also dual or plural; it consists of two or more agents changed—I hope to show the same agents as are in the cause. These constitute what has been, and what will always be, produced by the cause. But it often happens that a special end is contemplated

when we set an agent or agencies aworking; and when this is effected it is regarded as the proper or the only effect. But there may be other consequences which we did not consider or look for, or which we regard as minor or irrelevant ones. We wish for a shower to refresh the ground; as it falls it accomplishes that end, but it may also so swell a stream that it works destruction as it overflows its banks. A new machine is invented which produces a greater amount of work, but it throws a number of people, who followed the old methods, out of employment. It is desirable to have a phrase to denote these secondary effects, as they are regarded; and they may be described as *Concomitants*, or more expressly as *Incidents* or *Incidentals*. Perhaps some would call them Accidents, and they may be so called as they were not intended, as when one fires an overcharged gun and is wounded by its striking backward. But these accidents are quite as much caused by the agents as the others that were expected. In all cases the effect properly understood consists of the whole of the agents that have been acting put in a new state. Any one who sets new agencies agoing, say starting a new trade or passing a new law, is bound to look not merely to one but all the consequences that must follow.

III.

THE CONSERVATION OF ENERGY.—It has long been known and acknowledged that the sum of matter in the cosmos is always one and the same. We burn a piece of paper and it disappears from our view, but it is not annihilated. One portion of the matter has gone down in ashes, the other has gone up in smoke, and it is conceivable we might bring the scattered particles together, and they would become the original paper.

Imperious Cesar dead and turned to clay
Might stop a hole to keep the wind away.

It has been proven in our day that the same is true of the energy of matter. This doctrine was anticipated by several philosophic physicists,¹ but was established in our day by Mayer, by Joule, by Grove, and others. According to it, the sum of energy potential and actual capable of being brought into operation or in operation, is always one and the same. It cannot be increased and it cannot be diminished by any human, indeed, any mundane agency. The doctrine is thus stated by Clerk Maxwell: "The total energy of any body or system of bodies can neither be increased nor diminished by any mutual action of these bodies, though it may be transformed into any one of the forms of which energy is susceptible." The amount of energy is constant if unaffected by any agent external to itself. If acted on from without the energy will be increased by what has been communicated. If it acts on bodies without, the energy will be diminished by the work done. When any portion leaves one body it passes into another. If two balls strike each other, they have the same amount of energy before they strike and after they strike, though the energy may be decreased in one and increased to the same extent in the other. When the energy dis-

¹ It has been shown (Thomson and Tait's Natural Philosophy, § 269) that Newton had seized the principle which leads to the doctrine, "Work done on any system of bodies has its equivalent in the form of work done against friction, molecular forces or gravity if there be no acceleration; but if there be acceleration part of the work is expended in overcoming resistance to acceleration, and the additional kinetic energy developed is equivalent to the work so spent." It can be shown, I think, that Leibnitz also approached the doctrine from another side. In his letters to M. L'Hospital he speaks of "*l'egalite de la cause et de l'effect*," and says, "*la force se conserve toujours*." This points to the principle. Mayer, who did as much as any other man to establish the doctrine, also speaks of the effect being equal to the cause.

appears in one form, say in mechanical force moving a mass, it appears in another, say in heat, which is molecular motion.

It is an integrant part of this doctrine that the physical forces are all correlated, a truth beautifully expounded by Grove in his "Correlation of the Physical Forces." The energy may take various forms—say the purely mechanical, the chemical, the electric, the magnetic—perhaps also the gravitative, which may be a somewhat weak form of the correlated forces. These forms are capable of being transmitted into each other, and this in definite quantity: so much mechanical force into so much chemical force, which chemical force may be reconverted into the mechanical. This shows the whole physical forces of our world to be correlated and capable of being exchanged for one another, the sum of energy remaining the same.

It may not be easy to show the full relation between these three doctrines, which I hold to be severally established. But there is no inconsistency between them. Perhaps the full doctrine may be so stated as to embrace all the three and make them aspects of one grand truth. Our world may, as the Pythagoreans supposed, be like a closed globe with an incalculably large but definite number of bodies in it. These act and react upon each other, producing all the activity, all the movement in our world. The bodies act on each other, and form a cause. In doing so they modify each other and the result is the effect. Meanwhile the sum of matter and the sum of energy in the bodies continue one and the same, and both are incapable of increase or diminution. This is at least an intelligible doctrine, and embraces the three truths which have been separately stated, and seems in perfect consistency with all that has been established in regard both to the persistence of matter and the persistence of energy.

I am prepared to stand by and defend the statement now made. But when I inquire more particularly into the nature of things involved in causation, I feel that I am treading darkly and have to guard my steps. Important questions are pressed upon me, and I have to speak without dogmatism.

What is the relation of energy to causation? Energy is now the favorite phrase employed to express the activity of matter. Energy produces changes. But the change must be in something. Physical energy is in the system of bodies. By it one body acts on another. There must be energy of some sort in every system of bodies at all times. But the body acts only when another body is present. When two or more bodies act on each other we have cause. Cause is that which will ever produce the same effects.

Energy and cause must be realities quite as much as matter is. Indeed, energy and causation seem to be in the very nature of matter. Energy is the power that acts in matter. Matter, when it acts, acts causally. The energy in the two or more bodies acting as the cause is the power in causation.

Energy is said to be potential and actual or kinetic. When energy is merely potential the bodies are not in evident action of any kind. The energy becomes real or actual when a body comes into a relation of mutual action with another body. There is now causation.

Some would get rid of energy in physics by affirming that the whole phenomenon consists in motion. But there is energy, potential energy, when there is no seen motion. There is energy in that fragment of marble on my table, and this when the body is not moving. Energy is that which produces motion. The energy is measured by the work it does, that is, by the motion it produces.

The ball A, as it moves by its energy, strikes the ball B, loses its energy, and rests. What is the difference between A moving and A at rest? The answer is that it has an energy in the former case, which it has not in the latter. It will not regain its energy and be able to move till it gets it from some other body.

It has to be added that the body without the energy has the capacity (*δύναμις*) of receiving it.¹ "Energy," says Clerk Maxwell, "cannot exist except in connection with matter" (Matter and Motion, p. 165). We have a like statement by the authors of "The Unseen Universe" (p. 106). "Energy is never found separate from matter, so that we might define matter as the seat or vehicle of energy—that which is essential to the existence of the known forms of energy, without which, therefore, there could be no transformation of energy and therefore no *life* such as we now know it." It is commonly said that the energy is in the body. Sometimes the body has more and sometimes less of this energy. The stone taken to the top of a tower has energy which it loses when it falls to the foot. The spring has more energy because of energy expended in bending it. But the body has the capacity all the while to receive energy. Amid all changes the body continues with its capacity.

Let us now look at bodies acting according to the principles laid down. Without attempting to explain their

¹ Physicists have taken their phraseology from Aristotle, but have changed it. I am not sure whether it would not have been better had they adhered to it more closely. He has a *δύναμις*, a capacity, and an *ἐνέργεια*, or a power in actual exercise. This is very much the modern distinction between potential and actual energy. Between these two he had *εντελέχεια*, or readiness for action, a phrase which his commentators have had a difficulty in comprehending. It might have an appropriate meaning if applied to the two bodies brought into such a relation that they are ready to act.

exact nature or to enumerate them, let us designate the physical agencies operating in our world by the letters of the alphabet, and view them acting. A ball at rest is struck by a ball in motion. Let us call the ball at rest A and the ball in motion B. The two constitute the cause which is,

The cause AB.

As they act the effect follows: A moves while B's motion is stayed, and as the effect we have bodies changed,

The effect A'B'.

But in its motion A strikes C, and B is struck by D, and we have

Two Causes A'C and B'D,

and the

Double effect A'C' and B'D'.

But these agents come to act on other agents, E, F, G, H, and we have a

Complex result, A'E, C'F, B'G, D'H.

On the supposition that these agencies are in a closed ball and act on each other and on nothing else, the sum of energy would be one and the same, while each body might be gaining or losing energy, one or both.

In the first action of A B, A gains energy from B and moves, while B loses what energy it gives and is stayed. But A going through the air and over a surface loses the energy it gained, imparting it to the air and surface, and comes to rest; and B is struck by D and gets the energy it has lost and moves. There is thus a continual action kept up among the bodies. The energy in each body varies, it may be from moment to moment, but the amount among all the bodies continues the same. Certain important consequences follow.

1. We see that the effects come to act as causes. Thus if we represent the cause as A B and the effect as A' B',

we see that each of the agencies A' and B' is ready to act always when combined with some other agency, such as C and D. These last acting as causes become effects which may again become causes in combination with other or the same things. The conservation of energy thus keeps the world the same through ages, while these constant changes give it its activity; the one as it were constituting an unchanging ocean, the other the tides that agitate it. It is thus, as the Eleatics held, that everything is fixed and immutable, but equally true, as Heraclitus and the *φιλόσοφοι ρέοντες* taught, that everything is becoming.

2. We see what is the inertia of body. Newton's First Law of Motion follows from the principles we have laid down. A body at rest will continue at rest forever unless it is acted on by some other body; a body in motion will continue in motion in the same straight line unless stayed or deflected by some other body. All this is a corollary from the principle that causal action is the action of two or more bodies, and that a body will not act unless acted on by some other body.

3. We see the nature of the law of action and reaction. A body will not act unless there is some other body acting on it. Under this view matter is passive. It acts only so far as it is acted on. In another sense it is active. One body acts on another body; thus two bodies are A and B, and A and B are both changed. A at rest moves and B is stayed. What B loses in being stayed A gains and moves. This gives us Newton's Third Law of Motion, that Action is always equal to and the opposite of Reaction. B gives what it loses to A, but the sum of energy of the two is the same after action as before action. It follows that the energy given to A is equal to that lost by B.

4. It has been disputed whether the cause and its effect are contemporaneous or successive. The difference of

opinion springs from confused notions as to the nature of causation. In all causes there are at least two bodies and mutual action, both action and reaction, and these take place at the same time. When one ball strikes another, when oxygen combines with hydrogen, the action on the part of both bodies is simultaneous. But in causation proper the effect comes after the cause; it is the production of the cause. The gain of energy by the one ball and the loss of it by the other is the consequence of the simultaneous action. The water is the product of the chemical union of the two elements.

5. It is sometimes stated that the same effect may be produced by different causes. This is not true, or it is true, according as we understand it. A jar may be broken by a picture falling on it, but it may also be broken by a stone flung at it. The breaking of the jar may thus be produced by two different processes. But in both cases the breaking of the jar is only part of the effect. The full effect in the one case was the jar broken and the picture stayed; in the other, the jar broken with the stone stayed.

6. It is often said that great effects follow from small causes. A cow kicks a kerosene-lamp, and first the shed is ignited and then the half of a great city is burned. The British Government denies Colonial America a comparatively small claim; and a revolution breaks forth which separates Great Britain and the United States forever. But it is not quite correct, it is not the full truth, to say that one cause did all this. In all such cases there is a co-operation and succession of various causes. The fire is carried on by there being all around inflammable materials to propagate it, and the separation of the countries was really produced by a widespread discontent. In like manner a mighty agency may often issue in a very insignificant effect, because there are no conspiring powers. Three

very important philosophical doctrines seem to be thus established.

7. In physical nature (and I speak at present of no other) the effect consists of the bodies which have combined to form the cause being put in a new state. When the cause is $A\ B$, the effect is $A^1\ B^1$. The cause may be more complex, A, B, C, D, E, F , and all the bodies are modified and appear in this modified form in the effect, $A^1\ B^1\ C^1\ D^1\ E^1\ F^1$. Thus all action is a kind of evolution or development, a favorite doctrine of the theosophists of the East, who draw all mundane things out of other mundane things, and in the last resort all things from God. This doctrine is commonly apprehended in a mystical way which favors pantheism, but it contains important truth, which can and should be separated from the error with which it has been associated. It is not that the effect emanates or grows out from the cause, but it is that the effect consists in the bodies constituting the cause being put in a new state or form.

8. It is wrong to represent, with Hume, the relation of cause and effect as being mainly or essentially that of invariable antecedence and consequence. Most people have felt this doctrine to be meagre and unsatisfactory, without being able to correct it by supplying the felt deficiency. It is not the invariable sequence which constitutes causation; there must be something in causation which produces the invariable succession, otherwise, why should the sequence be so invariable? The certainty in the succession is produced by the power acting in the causes. Causation is thus seen to be in the very nature of the bodies acting as the causes.

9. We see and can explain what is meant by the continuity of nature which was noticed by observers from an early date, and which has been speculated on by many profound thinkers such as Leibnitz. When we look care-

fully into the operation of the material world we discover that there is no break in its successive actings. True, there is often no causal connection between one state of things and another going immediately before, between, for example, night and day, which do not produce each other while they are invariable antecedents and consequents. But when we go behind the more obvious appearances, we find that each is produced by antecedent causes; the day by the shining of the sun and the night by his withdrawal. If we trace any occurrence backward we find it preceded by a series of antecedents, and if we go on with it we have connected consequents. Causation is a bundle of twisted chains each of which follows its own course, but which are all joined in a connected machine. This it is which at the bottom produces the continuity of nature, which, however, is always gathering adjuncts to enable it to proceed.

10. Among these scattering forces there is need of a regulating power to produce order and beneficence. Without this the powers might work irregularly and injuriously, and bring forth only evil agents, such as flaming meteors and burning worlds, pestiferous creatures devouring one another, as gnats, serpents, wild beasts, arresting all forms of beauty and means of happiness, and yet incapable of annihilation. We find instead millions of agencies combining to accomplish good and benign ends. Take the ear. A sister utters a word, a vibration is started, it reaches our ear, is collected by the outer surface and knocks on the tympanum, is propagated into the middle ear, whence it sets in motion the hammer, the anvil, and the stirrup, thence it penetrates into the inner ear, where it vibrates through a liquid, affects the thousand and more organs of corti, is sent round the semicircular canals into the cochlea, and along the auditory nerve into the brain; the silence is broken, and we are cheered by a voice of love.

SECTION II.

PSYCHICAL CAUSATION.

I HAVE spoken of causation in physical nature. I am now to speak of it in psychical action.

The conservation of energy may be regarded as an established doctrine. Savans do indeed continue to assert that some of the most eminent among themselves do not understand it, or have not expressed it properly, or have illegitimately applied it. But it is universally admitted that the doctrine is a true and all-important one.

But let us properly understand and explain it, and keep it within its proper limits. It will be admitted by all at once that we are not entitled to affirm that the law extends beyond our cosmos or knowable universe. For anything we know there may be other worlds beyond ours, and we have no right to say that in these worlds there is only a definite amount of energy which cannot be increased or diminished. God may, or may not, be creating suns or earths or living beings beyond our ken, and altogether beyond our science. The doctrine of the conservation of energy, as I understand, holds only on the supposition that our cosmos is like a closed globe. It is conceivable that our world may not be so closed in; that the dissipated heat which is passing into space may travel into other worlds and influence them without our being able to notice it.

This restriction of the doctrine is so obvious that it is scarcely worth noticing it. But there are other limitations which it is of vast moment to bring into prominence, as they are being overlooked by some of our scientific men. There is clear evidence that there are other potences or

powers in nature besides the mechanical or physical forces. It is not proven that the doctrine of the conservation of energy applies to these.

Take Life. So far as I understand him, Herbert Spencer seems inclined to hold that the doctrine applies to all the powers in the world, even to the vital and mental; indeed, he seems incapable of distinguishing between nerve force and mental force. But he brings no proof that physical force and psychical force can be transmuted into each other. The language of most of our scientific speculators is hesitating. Huxley and Tyndall resolutely maintain that there is no proof that living beings can proceed from non-living. Darwin calls in three or four live germs, which he ascribes to God, before he can account for the development of vegetable and animal life. I have observed that those who reject a separate life or vital force are obliged to bring it in under another form. Thus Darwin calls in a pangenesis pervading organic nature, and Spencer has physiological units which play an important part in generation and heredity, and these are certainly vital forces. Then the arguments and experiments of Beale have to be met, and they have not yet been met by those who would deny the existence of a vital potency of some kind different from mechanical force.

But there are other agents in our world more clearly distinguished from the physical forces than the vital powers are. I refer to the psychical or mental; to those of which we are conscious, which in fact we know immediately; such as our sense perceptions, our memories, our judgments, our reasonings, our desires, our emotions, our resolves. These we know as directly and clearly as we know the affections of body, such as extension and resistance, and we have quite as good evidence of the existence of the one as of the other. Are these mental powers to be

included in the physical forces which can neither be increased nor diminished? Can the physical forces be transmuted into the mental, say the mechanical, or the chemical into thoughts, inclinations, and volitions? Nearly every scientific man in the present day admits, nay, maintains, that there is no proof of this. Many affirm that they cannot even conceive it to be so. Tyndall, no doubt, in his Belfast address hastened on to a high vaporous generalization, and declared that it looked as if all things could be brought under the potency of matter; in the mean time declaring, however, that he could not conceive how matter could affect mind, or mind matter. Mr. Fiske talks of our now needing to assume only one universal assumption, "the principle of continuity, the uniformity of nature, the persistence of force, or the law of causation:" but then he is obliged to add that "in no scientific sense is thought the product of molecular movement, and that the progress of modern discovery (correlation), so far from bridging over the chasm between mind and matter, tends rather to exhibit the distinction between them as absolute." The contradiction is here evident, and has been pointed out by scientific men; but I need not dwell upon it, my object being simply to show that thoughts and mental affections have not yet been reduced to physical forces. No doubt mind and body do so far affect each other. If a person is told that his dearest friend has died suddenly, his pulse will be apt to rise. Prof. Barker attaches a great importance to an experiment of a person first reading easy English, when his pulse was not affected, then reading Greek, when it rose several degrees. Such cases, and they might be multiplied indefinitely, show that mental thoughts and feelings do affect the brain-action, but they do not show that they add to or diminish the physical forces in the brain, or that the mental feeling or thought

has been transmuted into a movement of the pulse. A man standing by a stream pushes a big stone in the water aside and the stream flows a little more rapidly for a minute or two; but he has not thereby added to the quantity of water. Just as little does mental action, reasoning or feeling, add to or diminish the amount of physical force in the cerebro-spinal mass.

There is no evidence, but the very opposite, that our mental actions are identical or correlative with bodily motions or activities of any kind. Take as example, the discoveries of science, the reasonings of mathematicians, the visions of poets, the penetration of such philosophers as Aristotle, the ardor of the patriot, the beatific vision of the Christian, the sacrifices made by the poor for honor and honesty's sake. What savant will estimate for us in quantitative expressions of physics or chemistry, the depth of affection in the mother's bosom when she incurs death herself to save her son, or the height of genius reached by Shakespeare when he conceived Hamlet or Lady Macbeth? There is no one proper quality of matter, such as the occupation of space, or resistance, or elasticity, that can be predicated of thoughts or affections. There is no one quality of mind, such as perception, thought, reasoning, or love, that can be applied to this table or that chair. The instrument has not yet been invented that can weigh or measure our intellectual or voluntary operations. When a tree dies it carries into the ground not only the particles of matter which composed it, but the forces in the tree to add to the forces in the ground. It is the same with the body of brute or of man when it is buried, it carries with it into the grave all the physical forces; but were there any new physical forces added to the earth when Plato, Milton, Bacon, or Newton died?

It thus appears that in the very midst of the physical

forces and their correlations there may be other operations, mental or spiritual, and against this science has and can have nothing to say. I mean to refer to these farther on in the paper.

It is generally believed and acknowledged that there is cause and effect in mind as well as in body. In the one as in the other, we expect the same antecedents to be followed by the same consequents. When we wish to secure in ourselves or others, say in the young, a certain disposition or habit of patience and perseverance, we set agoing a training or discipline fitted to produce the result. When we are anxious to gain the good will of our neighbors, we address the motives most likely to sway them. The orator seeks to convince and move to action by arguments and considerations likely to influence his audience. In knowing a man's propensities, we can at times predict the part he will take in certain circumstances, and so far as we cannot do this fully, or accurately, it is simply because we are not fully acquainted with all the elements in his character; just as in physical nature we often cannot foresee the events that are to occur, because the powers operating are so numerous and complicated. There are some men of whom we are sure that they will not do a mean act. In many cases we can determine what a man's springs of action are by his acts; we are sure he is swayed by passion or malignity, by honor or by charity.

It is clear that there is Power in the mind—I use the word power, leaving the phrase energy to be applied by the physicists to the action of body. All writers who have had occasion to refer to the operations of the mind, have spoken of its powers or faculties, classifying them in various ways, as into the Gnoctic or Gnostic and the Creative with Aristotle, translated into Latin the Cognitive or Motive, or the Understanding and the Will, the Intellect

and the Feelings ; and they have spoken severally of the Senses, the Memory, the Imagination, the Reason, the Conscience, the Emotions, and Volitions. They have regarded all of these as having an influence, and capable of producing an effect.

It is not easy to determine precisely the nature of mental effectuation. We are not able to measure psychical as we do physical energy, in foot pounds. It might indeed be argued that, as being immediately conscious of it, we do, in fact, know as much in a general way of mental as we do of bodily production ; but we are not able to put it in quantitative form.

This power manifests itself in two ways. There is the power of the Mind over the Body, with the corresponding capacity of the Body to produce an impression on the Mind. For upwards of 2,000 years, philosophers held, generally, by the principle of Empedocles, the Sicilian philosopher, that like can only influence like, and they denied that mind could influence body, or body mind, and this opinion still lingers among metaphysicians. I deny the principle that like can only sway like, and I can see no difficulty in allowing that psychical action may produce physical action, say action of the nerves, and *vice versâ*. It certainly seems to do so. I will to move my arm, and there is action in the gray cellular matter of the periphery of the brain, which proceeds down the transmissive white matter to a basal nerve which moves the muscles and the bones, and the intended effect is produced. There seems to be a causal action throughout this process ; an action of the mind on the brain, and of the brain on the nerves. There is a like phenomenon in the feelings producing an effect on the organism, as when a ludicrous idea leads to laughter, and grief bursts out in tears, and a sense of kindness received covers the face with smiles.

Even intellectual exercises seem to have an effect on the brain, as exhaustion is felt when they are prolonged.

There is also an influence of the body on the mind, as when the bodily senses produce a mental perception, say of a form or a color, and a healthy organism raises up pleasant feelings, or a diseased stomach or liver raises up gloomy thoughts. In all these cases there is a power producing certain defined effects. It may be argued that the effects follow not directly, but by some agency commonly supposed to be unknown. There is a constant inquiry into the *how* in the relation between mind and body, usually followed by the acknowledgment that it is a mystery. At this point it may at once be allowed that in the mutual action of mind and body there are processes unknown to us. No one will maintain that the physiologist can as yet specify all the steps involved in the process by which an external object reaches the perceiving mind. But suppose he is able to do so, it does not appear to me that the mystery would thereby be diminished. In tracing back the nervous and the cerebral action, we come at last to a point or line where the body acts on the mind. The only way of avoiding this conclusion is by calling in some sort of *tertium quid* in the shape say of a plastic medium, which communicates between mind and body. The difficulty is not thereby removed, it is not even lessened; for, if it is of the nature of either body or mind, we have still to show how it acts on mind if it is body, and how it acts on body if it is mind. If it is of the nature, neither of body nor mind, it is an unwarranted hypothesis, explaining nothing, and multiplying the difficulties, for we have now to explain how in one case body acts on the medium, and the medium on mind, and how in the other case mind acts on the medium and the medium on body. The simplest, and on the whole the most reasonable supposition, is that mind has a potency

whereby it acts on body, and body a potency whereby it acts on mind. This is far more likely than the Malebranche's hypothesis of occasional cause, or that of pre-established harmony by Leibnitz. Sooner or later, we may be able to determine precisely the nature of the action, that is, in what circumstances it acts, how far it extends, and how it is limited. This is all we can know about any law of nature, and when this is accomplished there is no more mystery than in the law of the mutual attraction of matter, or in that of chemical affinity.

But very nice questions are here started, and to these we can give little more than negative answers, fitted to remove erroneous impressions. Is there any such relation in the mutual action of psychical and physical action as is implied in the conservation of material energy? When the body acts on mind, does the energy in matter go into mind, and appear in a new form? Or when mind acts on body, is there new energy entering matter? I answer unhesitatingly that there is no proof of this whatever. On the contrary, every thing goes on in the body according to the laws or properties of body, and every thing in the mind according to the nature of mind. Our volitions and other mental acts may give a new direction to the forces in the bodies, but they do not add to them or increase them. Our will moves the arm which was before at rest, but it only calls into activity the potential energy already there, and that energy acts according to its nature. The senses make known an object to us, but it does not add any new mental power, and the object being there, or rather being known there, calls forth ideas or feelings according to the mental laws of association. In the body every thing proceeds according to physiological laws; and in the mind according to psychical laws.

In all such causation there is at least a duality in the

cause, both a physiological and a psychical: these together constitute the cause without which the effect would not follow. There is a like duplicity in the effects, both body and mind are changed.

Secondly, there is causation operating in the mind itself. By the will and other psychical acts we can influence not only the body, but the state of the mind. We can detain the present idea, and bring up thereby a succession of associations pleasant or unpleasant: profitable, as when we contemplate a high exemplar, or cherish a good resolution; or noxious, as we cherish revenge or lust. There are certain states of mind which follow necessarily from certain others. The idea of a friend in distress raises grief, of an acceptable gift raises gladness.

I am not sure that we can express accurately the nature of psychical causation, yet we can say much about it. We know so far the limits of the several faculties. We know much of the power of sense perception, as that it reveals objects external to us; that we do not know distance directly by the eye, that we cannot have any idea of a color or odor that has not been made known by a special inlet,—the man born blind has no conception of color. We have ascertained as to memory, that it remembers whatever was vivid in the original impression. The imagination can bring up in new forms and dispositions only what we have previously experienced. We can reason only when we use a middle term to combine the two terms whose relation we do not know. Emotion springs up only when we have an apprehension of something good or evil. Conscience approves of certain acts, and condemns others. We cannot express these powers quantitatively, as we do those of gravity and chemical affinity. We cannot number or measure them as we do the physical forces. Still we can notice their extent and their boundaries. Psychology is doing its proper work

when, with consciousness as its agent of observation, it is finding out the powers of the mind and their functions.

In inquiring more specifically into the nature of psychical causation we find that, while in one sense it is simple, in another sense it is complex. We have seen that there is a duality or plurality in all physical production, both in the cause and in the effect. We have seen that there is duality or plurality in the action of mind on body and body on mind. There is a like complexity or plurality in purely psychical action, both in the cause and in the effect. What is the cause of this reproach of conscience which we feel after committing an evil deed? An essential part of it is no doubt the immediately state, the idea of the deed. But this is not all. Acting with this there is a native moral power, a power of conscience. It is only when there is joint action that the deed is condemned. The mere image or conception of the deed will not call forth the reproach; nor, on the other hand, will the moral power act unless there be an apprehension of the deed: the effect is produced by the union of the two. So it is in all cases. When the mother grieves over the death of her son, there is more than the conception of the event; there is the deep affection which she cherished towards him.

We have seen, that in physical causation, there is always something abiding. Aristotle had a material, as well as an efficient cause. It is the same *mutatis mutandis* in psychical action. In all material action there is a body as a substance, and in all mental action there is mind as a substance; both being permanent. This is a truth never seen or acknowledged by Mr. John S. Mill, who defined mind as "a series of feelings aware of itself," whereas it is an abiding existence with a series of feelings. He defined body as "a permanent possibility of sensations," whereas it is a permanent thing, ever ready to produce sensations within our minds. The present state of the

soul is always the necessary effect of the immediately preceding one. But in that preceding state, and I may add in the present one, there is the mind itself with its capacities abiding. The cause of every given thought and feeling is thus a complex one, made up of some previous thought or feeling, but also of the mind thinking and feeling.

The portrait suggests the original. Is the portrait, or the perception of it, the cause of the thought of the person painted? I do not regard this as a full account of the cause. The portrait may be seen by one who never saw the original, and to him there is no such suggestion. The true cause embraces the sight of the portrait, but there is also involved in it the mind with its knowledge of the person painted, and also the principle that like suggests like. When two premises are before the mind, they necessitate a conclusion, as when we have it allowed that "all men have a conscience," and that "the Indian is a man," we conclude that "he has a conscience." Are the two premises the cause of the conclusion? I believe they are not to be so regarded. The act taken by itself is to be regarded as one of judgment, and not causation. In the cause there are not only the premises, but the laws of the mind, or rather the mind with its laws, that is, the laws of reasoning, especially the dictum of Aristotle, that whatever is true of a class is true of all the members of the class. Every thought, every feeling, I may add every resolution, is thus the result of the state of the mind with its properties, and of the immediately preceding thought or feeling, which might be called the occasion. It thus appears that the web of causation is quite as complicated in psychical as in physical nature.

I am unwilling, in this paper, to enter into the conflict of ages as to whether there is causation in acts of the will. I am prepared to argue that there is. On the other hand, I hold resolutely that there is a sense in which the

will is free. Holding by both these truths, as I reckon them, I am obliged to add that I cannot remove all the difficulties in which I am thus involved. It is asked, how can there be free will, which I resolutely hold, if our volitions are after determined by something out of themselves, and above themselves? I do not profess to be able thoroughly to clear up this subject; but the view of causation which has been set forth in this treatise is fitted, I reckon, to lessen, if not to remove, some of the difficulties. We have seen that there may be different kinds of causation. The causes that act on the will are certainly not mechanical or physical, like those which compel a body to move in a particular way. A man's volitions are not swayed altogether, or even mainly, by the same circumstances; for two men will act differently in like circumstances, and this evidently owing to the difference of their character. We have seen that there are causes operating within the mind itself. Those that finally sway and determine the will lie within. If we properly understand the language, I believe we may admit that in every particular act the mind is swayed by motives, but the motives are to be found, not out of the mind, but in the mind, nay, largely in the will itself. The causes which sway the will are mainly in our nature and character, in our dispositions and habits which our own wills have been forming. It is certain that this man will yield to the temptation, and be guilty of excessive drinking in a particular company, but it is because of habits which he has indulged in for years. It is certain that this other man will act honorably in a certain trying position, but then it is because he is guided by right principles, and by an upright character. I do not say that this doctrine delivers us from all difficulties, but it helps to relieve us from the oppression which we feel when we are told that our whole acts are under a law of stern necessity which allows no liberty.

SECTION III.

CAUSATION SUBJECTIVE.

THE above is all I am able to say as to the nature of cause. I do not claim to have removed all difficulties. I am satisfied if I have corrected some erroneous notions and shed some light on important points. I am now to turn to the other side of my subject, to the mental process involved in our conviction as to the relation between cause and effect. Even as causation objective pervades all nature, so causation subjective runs as a binding power through the great body of our mental exercises.

We may allow physicists to use the word energy for the activities of matter. But there is activity in mind as well as matter and it is needful to have a word to express both. The word Power may be used for this purpose.

There are two special ways in which we come to know power. The one is by the muscular sense. We move a muscle, and we find it resisted by the objects it meets with. We experience this in the first exercise of our muscular activity and in every succeeding one. There is resistance offered not only by that table, but by the air as the arm passes through it. Science finds it necessary to maintain that the very ether has been offering resistance to the passage through it of the comet of Encke. The other is by the exercise of our voluntary power. Our volitions produce changes directly or indirectly over our bodies of which we are sensible. We will to move the arm, and it moves. Our will also produces changes on the states of our mind.

We will to detain a present thought, and it keeps with us as long as we will, thereby resisting the ordinary flow of association.

I believe that both these potencies have a wider extension than is commonly supposed. I have at times thought that there may be power discerned, as it is certainly involved, in the exercise of all the senses. In the vibrations which enter the ear, in the rays of light that fall upon the eye, in the odors that reach the nostrils, in the liquid which affect the palate, there is a mutual action dully felt of the touching bodies and of the organism. It might be argued, I think, that in all these ways we get an apprehension of bodies as having power, just as it is now generally acknowledged we have a knowledge by all the senses of bodies as having extension. We know our nostrils and palate as having a certain direction which must be in space, so we seem to know these same nostrils as affected, which implies power.

I am farther sure that volitions are constantly mingling with our mental operations. A sensation is agreeable and we detain it, or it is disagreeable and we banish it or escape from it, and in all such processes we use causation. There is an exercise of will implied in the regulation of our thoughts, otherwise they would run wild as in our dreams. In making ourselves acquainted with any subject we have to attend to it, and attention is an act of the will. In reading a book and in listening to a discourse we have to keep our thoughts from wandering, which they would be sure to do if they were allowed to follow merely the laws of involuntary association. We have to order our thoughts when we are conversing with our fellow men, and when we are writing intelligently. The orator has to give his thoughts a direction all toward a point, when he is seeking to arouse and persuade. The mathematician, and indeed,

every one who reasons closely, has to restrain and guide his ideas and his judgments. Some have supposed that one difference between our waking thoughts and our dreams lies in the will having lost its control in the latter, mainly owing, it may be, to the weariness of the organism, indisposing us to farther exertion till the pool which had run out is again filled. Causation has thus a place in the greater number of our thinking operations. We exercise power in every volition, but volition is constantly interposing to direct our thoughts.

Causation has a place in the very steps by which we obtain our knowledge of things. It is involved in the very means by which we acquire our knowledge of external objects. We know them as affecting us, that is, having power over us. It is much the same with all the knowledge acquired by us. The things have been made known by their having power over us, or some other thing, by which they are made known to us.¹ It is a common saying that we know things by their properties, but what are properties but powers? It is not by induction, that is, a gathered experience, that we know things as having power; we know this in our primary experience, and in all subsequent experiences. Power is thus involved in things as known to us. We cannot think of them except as having powers.

It will now be seen how I would settle the question which has been the leading philosophic one since the days of David Hume, as to whether our conviction as to cause and effect is *a priori* or *a posteriori*, to use the phraseology of Kant, or, to employ more unexceptionable terms, arises at once from our looking at things, or is the reasoned result of a gathered observation. It is certainly experiential, as all

¹ "We are obliged," says Herbert Spencer in his *First Principles*, "to regard every phenomenon as a manifestation of some Power by which we are acted upon." Let him follow out this.

our knowledges and beliefs are in the consciousness of the mind, but it is not experiential in the sense of needing induction and reasoning. It is intuitive in that we perceive it to be in the very nature of the thing. It can stand the tests of intuition, as these have been enunciated in the paper on the *Criteria of Truth*. We perceive objects directly as having power and acting causally. It comes in consequence to be necessary; we cannot believe it to be otherwise. We cannot be made to believe that there is an event without a cause, or a causal relation without a definite action being ready to follow. It is, thirdly, universal in that all men have the conviction.

Not that this is done without the competent and appropriate mental capacity, but this is neither less nor more than the faculty to perceive the thing, and what is in the thing. These perceptions may take several forms, such as primitive cognitions, faiths, and judgments: cognitions when we look directly on things, faiths when they are absent and yet we believe in them, and judgments when we compare the things known and believed in. Our perception of self and body having power is of the nature of a primitive cognition. Our conviction as to cause is more of the relation of a judgment in which we discover a relation. Except that I am not partial to the formidable nomenclature, I am willing to allow it to be called, with Kant, a synthetic judgment *à priori*. But the two, cause and effect, are connected, not by a category or a form of any kind in the mind, as Kant held, but in the very nature of the things, in the action of things according to their nature, that is, the properties or powers by which they are endowed.

SECTION IV.

VARIOUS SORTS OF CAUSES.

FROM the nature of causation, as I have endeavored to unfold it, there is a vast complexity in the activities of our world. There are two, or commonly more, agents in every cause, two or more in every effect. What a variety of powers at work in the great natural occurrences, say in the seasons, in the production of spring with its increased heat, its buds and blossoms and leaves. What a complication in the production of the great epochs of history: in the spread of Christianity, in the revival of learning in the fifteenth century, in the great Reformation of religion, in the English, the American, and French revolutions. There are innumerable agencies concurring and crossing in all the important events of our personal and family life.

In this complexity a number of very marked operations, well worthy of consideration, come under our view. One of these is Development or Evolution. All physical causation is in a sense evolution; it is a body, or rather a combination of bodies in one state produced by a body or bodies in another state. The development as such may or may not be beneficent. It is conceivable that it might move on ruthlessly, working only confusion and misery to sentient beings. When it proceeds in an orderly manner, with beneficent laws, and means of promoting the comfort of animate beings, there is evidence of good arrangement. The subject of Development is so important as to require

a separate paper, when it will be shown that it is an organized causation.

It will be necessary here to take up a subject on which I fear little light can be thrown at present. It is the nature of energy and causation in chemical action. Oxygen and hydrogen combine to form water ; what is the relation of the two elements ? Is it simply mechanical ? Or does it imply the existence and operation of a separate power which we may provisionally call the chemical ? To these questions no very satisfactory reply can be given at present. There are some presumptions in favor of its being shown in the end that the union is merely mechanical. On the other hand, there are phenomena which cannot be thus explained at the stage which science has now reached. The most remarkable peculiarity of this chemical combination is that the compound exhibits properties of which no trace can be found in the separate elements. Water shows qualities which neither oxygen nor hydrogen seem to possess. In consequence many questions arise which cannot at this present time be definitely and certainly answered. Were the powers now shown by the compound in the elements in a potential, but not in a real state ? Have we in the union merely an example of the duality or plurality in all causation, the elements taking a new form or shape in the compound ? It is certain the bodies constituting the elements have not lost their identity. The water can be decomposed, by some other body acting on it, into the oxygen and hydrogen of which it is composed.

The above are questions which we may expect to have settled sooner or later, as we come to know more of the constitution of matter.

In the complexity of causal action we may notice the combination of a number of agencies necessary in order to the production of results which have an important place

in the economy of nature. These, in a loose sense, may be called causes. From the very commencement of reflective inquiry men had to refer to causes. But for ages the views taken and the nomenclature used were vague and confused, though containing important elements of truth which have been unfortunately omitted in the more precise systems of modern times. In the theosophies of the East causation was represented as an emanation of one thing out of another, and of all things out of God. The tendency in this conception was toward pantheism. The Pythagoreans made numbers the cause of things, meaning that which makes things what they are. Aristotle blames Plato for neglecting efficient and final causes and giving exclusive attention to the matter out of which things are formed, and the form they are made to take.

Aristotle was the first to draw distinction between the different kinds of cause. This he did in his *Physics*, ii. 3, and recapitulated in his *Metaphysics*, i. 3, with a farther reference in *Post Anal.*, ii. 11. In these passages he uses the word (cause) in a wider, and it may be allowed in a looser, sense than we now do. The grand object of the First Philosophy is to discover causes. By cause he meant all that is necessary to account for or explain a thing, all that is necessary in order to its *being as it is*, and therefore to our comprehending it and explaining it. In later times the word cause is commonly restricted to efficient cause, to productive cause, or as Hume analyzed it, invariable antecedent. Aristotle included this, but also included other things *necessary*, as he thought, *to make a thing what it is*; which is his definition of cause. He had four kinds of causes. He had first a matter and a subject (τὴν ὕλην καὶ τὸ ὑποκείμενον). He had secondly a cause, whence the beginning of motion (ὁθεν ἡ ἀρχὴ τῆς κίνησεως). Thirdly, he had a cause which was the substance—that in

which a thing consisted (*τὴν οὐσίαν καὶ τό τι ἦν εἶναι*). Fourthly, he had that on account of which a thing is (*τὸ οὖν ἕνεκα*). More briefly, he had a *ύλή*, an *ἀρχὴ κινήσεως*, an *εἶδος*, and a *τέλος*, which we translate a material, an efficient, a formal, and a final cause. He sought in every object for each of these. He did not regard the one as inconsistent with the other. He often found several of them in one and the same object (*De Anim.*, ii. 8). In regard to the material cause, he represents the Ionians as seeking for it and finding it in water, air, or fire. As to the efficient cause, he regarded it as that which produces motion or change. The formal cause corresponded to the Idea of Plato, only he represents it as being not above things, but in things. He does not use final cause to prove the divine existence; he supposes the thing to have in itself (as immanent) an end after which it is striving—a view very much the same as that taken by Hegel. He blames Plato for neglecting the efficient and the final, and confining his attention to the material and the formal.

These distinctions were not drawn by the thinkers who preceded Aristotle. Socrates, without giving final cause a separate place, used the argument from final cause—the argument from intention or design, as seen for instance in the eyelids to protect the eyes. Plato argued more from the models or patterns in nature. Epicurus simply ignored final causes. The Stoics identified efficient and final, representing every thing as done in conformity with the decree (*fatum*) of God; and so ordered that one thing is a prognostic of another thing. Cicero (*De Nat. Deor.* 115) and Augustine (*Civ. Dei*, xi. 4, 21) appeal, like Plato, to the order of the universe. The schoolmen did not use Aristotle's division of causes so frequently as they did his logical distinctions, but occasionally they proceeded upon it.

Coming to modern times, Bacon adopted Aristotle's four-

fold division of causes. He gives material and formal causes to Physics, and formal and final to Metaphysics, which he regards as occupying a higher sphere than physics. It is often said, by men who have never read Bacon's works and take his opinions at second-hand, that Bacon sets aside final cause. This is an entire mistake. He would exclude it from physics, but it is only to give it a higher place in metaphysics. He compares it to the vestal virgins, not productive indeed, but dedicated to God. He erred, I think, in excluding final cause altogether from physics, where it may be used, if properly restricted, in the study of organisms, where the means are ends and the ends means. While he was living, Harvey discovered the circulation of the blood by the principle of teleology, arguing that the valves which he saw opening in one direction and not in the opposite must be intended to let a fluid pass through—thus discovering the grand doctrine of the circulation of the blood. But Bacon was right in insisting so strongly that the discovery of final cause should not keep men from seeking the efficient cause. Bacon attached great importance to the discovery of forms, which he represented as the supreme end of all science. The form of a thing is that which makes it what it is—thus, anticipating our latest science, he regards motion as the form of heat. Without fully seeing it, he came very near to Plato; the aim of all science, according to both, being to discover ideas, forms, or patterns; only, according to Plato, the ideas are to be discovered by calling forth the inward idea, while according to Bacon they are to be found by a careful induction of facts. Bacon showed profound wisdom in making the discovery of forms the supreme end of all science; and in placing the forms of nature at the very top of the pyramid and next unto God.

Descartes perceived God in every mechanical action, and

could not believe that God was to be seen in one act more than in another; and insists that we ought to beware lest, "in our presumption, we imagine that the ends which God proposed to Himself in the creation of the world are understood by us" (*Princip. Philos.*, iii. 2). There is a misapprehension here of the kind of ends supposed to be discovered by final cause, and it is curious that his error is pointed out by Gassendi, an adherent of the Epicurean philosophy. "You say," he replies to Descartes, "that it does not seem to you that you could investigate and undertake to discover without rashness the ends of God. But although that may be true if you mean to speak of ends that God has willed to be hidden, still it cannot be the case with those which He has, as it were, exposed to the view of the world, and which are discovered without much labor." The celebrated natural philosopher Robert Boyle also answered Descartes. Referring to a gnomonic instrument, "It would no doubt be great presumption on the part of a peasant, ignorant alike of mathematical science and the intentions of the artist, to believe himself capable of discovering all the ends in view of which this machine so curiously wrought has been constructed; but when he remarks that it is furnished with an index with lines and horary numbers—in short, with all that constitutes a sun-dial, and sees successively the shadow of the index mark in succession the hour of the day, there would on his part be as little presumption as error in concluding that this instrument, whatever may be its other uses, is certainly a dial made to show the hours." Leibnitz, with his usual comprehensiveness of mind, would unite final and physical causes. "It is good," he says, "to conciliate those who hope to explain mechanically the formation of the first texture of an animal, and of the entire mechanism of the parts with those who give

an account of the same structure by final causes. Both are good, and the authors who follow these different ways ought not to abuse each other.”¹

From this survey we gather that some of the profoundest thinkers that have appeared in our world have seen more than mechanical cause in the course of nature, and that they have discovered no inconsistency between efficient and final cause. We are now to illustrate these two points.

There is a foundation in nature for Aristotle's fourfold division of explanatory causes, though we may have to amend it somewhat to suit it to modern science.

Material Cause.—Here we inquire into the nature of the substances, be they inanimate body, or living body or mind. It is the end pursued in chemistry, and in all the sciences dependent on it, and so far also in psychology. No doubt the inquiries into the matter, and the forces in matter, may be mixed up with each other; but they may be distinguished, and it is often desirable to separate them.

We may or may not approve of calling the matter out of which a thing is formed a cause, but it certainly has a place, and this a deep one, in the economy of nature, and as such it should be acknowledged. It is allowed that there is never energy without body, and the body should be taken into account as well as the energy, in explaining what things are and how they act.

Efficient Cause.—This is the kind of cause whose nature I have been seeking to determine in the earlier part of this paper. It is the power element in what makes a thing to be what it is. This sort of cause is not inconsistent with the others. It is necessary in order to make the matter take a form and fulfil an end.

¹ The quotations from Gassendi, Boyle, and Leibnitz may be found in M. Janet's work on "Final Cause," translated by W. Affleck, pp. 184, 185, 119.

Formal Cause—the idea of Plato, the *εἶδος* of Aristotle, the law of modern science, and the type of naturalists. We have here mechanical causes, but co-ordinated so as to produce orderly results, as we see in what are called the laws of nature. The properties of bodies, such as attraction, chemical affinity, etc., may be simple; but they require conditions, that is, co-operating agents, in order to their working. But the general laws of nature are always complex; that is, imply the action of two or more agents operating and co-operating. We see this in the law of the succession of day and night, of the revolution of the seasons, spring, summer, autumn, and winter; in the motion of the planets in their orbits. What a number and variety of agents conspiring in the reproduction of plants and animals; in the seed, the blade, the fruit, the decay of the vegetable; in the germ, the growth, the death of the animal! What a complexity in order to the production of the mathematically exact forms and harmonious colors of the shell, the stalk and the flower of plants, and the bones of animals! What a combination to produce those types according to which we classify the animate kingdoms, and which make every living thing to grow after its kind! What a complex complexity in that assortment of forces which produce development and heredity—processes of which we now talk so glibly and familiarly, but of the elements of which we know so little! All these may be called the ideas or forms of nature.

Much the same may be said of Formal as I have said of Material cause: we may or may not approve of the term cause being applied to it. But it is quite as clear that things are made to take a form as that they have a matter, and are produced out of that matter. It is one end aimed at in all science to discover what the form, or, as it is now more commonly called, the law is. Our view of nature is

narrow and partial if we see only its composition and the mechanical powers acting in it. In that rich web we should notice not only the silk threads and the shuttle carrying them along, but also the pattern after which the whole is formed.

Final Cause.—Here there is a concurrence of mechanical or efficient causes to produce an evident result. It is not an antecedent followed by an effect; it is the consequent or issue of a number of conspiring antecedents. From the number of agents combining to effect an end we argue that there are intentions and purposes. I suppose a hundred agents so far independent must combine before I can see. I infer that there must have been a designed arrangement in order to their coming together to produce the obvious end.

We discover these four causes in the works of man. That statue of Hercules had a material cause in the marble in the quarry; an efficient cause in the chisel of the sculptor; a formal cause in the shape given it; and a final cause in its being set up in a temple. We can discover the same four causes in nature. In shells we have the matter, be it carbonate of lime, or whatever else; the chemical forces operating; the mathematical form taken—possibly a spiral; and an end the protection of the animal. In the plant, say the apple-tree, we have the chemical elements; we have the vital forces, whatever they be; we have the shape taken by the tree and by its flower; and a final cause in the fruit provided for the sustenance of living creatures. In the cereals there is matter in the composition of the plants, an efficient (not necessarily a mechanical) cause in the vital forces, a formal cause in the form taken, and a final cause in the food provided for the nourishment of man and living creatures. Take the two colors, blue-purple and orange-yellow, found in the flower of the forget-me-

not: they must have a composition produced in some way by the dividing of the beam; they are found in all the plants of the species; and they are suited to the eye, which delights to look on complementary colors—that is, the colors that make up the beam.

I believe that these four principles can be discovered in all animated objects. In dead matter it may be more difficult to detect all of them in every individual object. Yet in the higher forms we can discover several of them. Thus in crystals, the crystalline forms, which all bodily substances are capable of assuming, we have the matter, the forces, and also the forms; but it might be difficult to discover a special final cause. Plato, in seeking to find his idea everywhere, was asked whether he could find it in the dust or sand of the ground, and acknowledged that he was in difficulties. Modern science could help him here, and show him by the microscope beautiful forms in the rudest matter. It might be impossible in such cases to detect a final cause; but just as we argue that there is efficient cause everywhere, though we may not be able to discover it in every occurrence, we may, on a like principle, infer that as we discover a purpose in so many parts of nature so there is purpose everywhere, if only we can discover it; and thus reach the conclusion of Socrates, Plato, and Leibnitz, that nature consists of physical causes working for ends.

SECTION V.

FINAL CAUSE.

I AM sure that the course of nature cannot be comprehended or explained except by taking into account more than efficient cause, except indeed by all of the principles we have been considering. The chemist will insist on knowing what is the elemental composition of the crystal, the rose, or the crustacean. The naturalist will seek for the type that he may be able to arrange it. The merchant will wish to know its economical use that he may buy or sell it.

We know not what is the number of elements in the material universe. The ancient Greeks supposed them to be four: air, water, fire, and earth. Modern chemistry has found sixty-four, which it cannot analyze into any thing simpler. Many chemists think that some of these can be resolved into others. It is certain that there is in nature a certain number of elements, be it four or sixty-four, with their properties. We may conclude that these are adapted to each other. Were they not, they would not act upon each other, molecule on molecule, atom on atom, mass on mass, as they evidently do. The orderly results point to an instituted order. Being so adapted, if these elements were cast into a capacious vessel, they would produce regular results such as we see in a kaleidoscope, where we have a number of beads thrown into a constructed receptacle, and reflected by glass, and producing regular figures. Here we have in the figures a material

cause in the instrument, with its wood and glass and beads ; an efficient cause in the movements of the beads ; and a formal cause in the regular shapes and dispositions. It can scarcely be said that in the figures themselves there is a final cause, for no end is served by them, except indeed to give pleasure to the beholder. But there is certainly a formal cause. And I would have it noticed that this form is a result of arrangements made, and of mutual adaptations, arguing a purpose and design. So it is with the laws, as they are called, and types of nature. They are the result of a vast number of agents or efficient causes combining and co-operating. We thus see that the very order of nature is a manifestation and evidence, as Plato, Cicero, and Augustine argued, of plan and purpose, and therefore of intelligence.

But Final Cause furnishes another and a more special argument. It may be noticed of the figures of the kaleidoscope that they never show final cause, properly so called. They never show amidst their great varieties such utility as a lichen, a polype, a finger or a toe, much less a hand or an ear. Mathematicians tell us how many millions of chances there are against a handful of molecules ever producing an ear, and how many millions of millions against their producing in the same frame an eye, a nose, a tongue, skin, and muscle, and nerve, and brain. How many milliards of milliards of chances against the formation of all the senses and organs of all the creatures on the face of the earth. The meeting of these efficient causes in the frame of man and animal makes it as certain as mathematics can make it of their being an end contemplated and designed.

The force of this argument is not to be avoided by saying that what we represent as final causes are merely conditions of existence. True they are conditions of existence ;

but the proofs of design lie in the conditions of existence all meeting in the hundreds or thousands of coincidences all coming together to form the rose, or the deer. The strings of a harp are the conditions of its existence, and we argue that the harp has been made for a purpose, because the strings are all there and yield music.

At this place I think it proper to refer to the *Course of Nature*, an address delivered by Professor Newcomb, as President of the American Association for the Promotion of Science. I do so because there is presented there, by a gentleman whom I profoundly respect, the views entertained by a great many scientific men in the present day. The Professor evidently labors under several very erroneous impressions in regard to final cause. "From the very earliest at which man began to think two modes of explaining the operations of nature have presented themselves to his attention. These modes are sometimes designated as the teleological and mechanical." He thinks that final cause is meant to give the same sort of explanation of a phenomenon as efficient cause. But all enlightened defenders of final cause have asserted that the two principles or causes do not accomplish the same ends. Final causes or ends were never meant to account for the production of an event; this is done by efficient cause. On the other hand, an efficient cause does not show how efficient causes or forces should combine to produce an obviously intended beneficent result—the good, as Aristotle calls the final cause. The fact that the ear was meant to hear did not make the ear, though there are passages in Lamarek which seem to indicate that the wish of the fish to fly actually gave it wings. We bring in efficient cause to explain one thing, namely, production; and final cause to explain another thing, a combination to produce a useful end. Again, he argues that we are entitled to call in final cause only when physi-

cal cause fails, thereby falling into the error of Kant and Laplace, both far-sighted but one-eyed men. But surely he sees both efficient and final cause in the telescope by which he scans the heavens so profitably: efficient cause in the formation of it by Clark, and final cause in the use to which he is able to turn it. Nor will it do to say that he uses the instrument because it is there; it is there because he or some other was meant to employ it. It is conceivable that there should be a like union of the two principles in the eye and in the works of nature generally.

He is evidently under a farther impression that the two are inconsistent. He thus makes them rivals, and supposes that the one strives with and overcomes the other. But final cause, so far from being inconsistent with efficient cause, implies a combination of physical causes, which are blind in themselves, but which are led by a prearranging power to combine to accomplish an end. He insinuates that as mechanical cause comes to be seen everywhere final cause will have to hide itself. But viewed by a mind capable of seeing two truths alongside of each other, the belief in and the evidence of ends in nature are not vanishing, as the Professor expects. We have as clear and certain proof that the eye was meant to see and the ear to hear as the first man had, and can now discover more fully the wonderful machinery by which the ends are effected.

The Professor's argument against final cause is the most glaring example of the fallacy of irrelevant conclusion or of *ignoratio elenchi*, which I have seen for many a day. He would disprove the existence of final cause, and he merely attempts to prove the universal presence of mechanical cause. With proper explanations we may admit all he claims as to mechanism and not feel thereby that teleology is weakened. Let us look at the principles at work when our astronomer gazes at a binary star with his telescope.

Rays go out from the star, proceed in vibrations, first through millions of miles of ether, then through thousands of miles of air; then into the telescope, where they are turned in a variety of ways; then into the eye, into the cornea, which is transparent; into convergent media, which unite the luminous rays, the three refracting media—the aqueous humor, crystalline lens, and vitreous humor—till they fall on the retina, where, according to the theory of Young, carried out by Helmholtz, there are twelve thousand or even twenty thousand cones, sensitive to various kinds of light, and they form there the image of two stars with perhaps complementary colors. The process is not ended till an action goes up through the optic nerve into the brain, and not till then does the astronomer see his star. The want or the failure of any one of these processes, thousands in number, would prevent vision or make it imperfect.¹ In this long and complicated process there has been mechanical cause throughout. Professor Newcomb will not deny that there is final cause, in the part of it which goes on in the telescope; but if there be an end manifested in the passage of the rays through the one instrument, the telescope, there is like, but far stronger evidence of a purpose in the other instrument, the eye.

In all such discussions a distinction of some kind is drawn as to the actual operations of the forces or laws of nature.

¹ M. Janet has shown that Helmholtz has answered his own objection derived from the imperfections in the eye. The great German physicist says: "The appropriateness of the eye to its end exists in the most perfect manner, and is revealed even in the limits given to its defects. *A reasonable man will not take a razor to cleave blocks*; in like manner every useful refinement in the optical use of the eye would have rendered that organ more delicate and slower in its application." This is sufficient to defend final cause. But a full explanation may have to take into account the existence—the great mystery of our world—of disease and pain.

Paley in his "Natural Theology" indicates a distinction between the laws of nature and their construction, and speaks of an adjustment being necessary, and of "the laws being fixed" and "the construction being adapted to them" ("Nat. Theol.," iii.). Dr. Chalmers drew elaborately and illustrated at great length the distinction between the Laws of Matter and the Collocations or Dispositions of Matter. "We can imagine all the present and existing laws of matter to be in full operation, and yet, just for the want of a right local disposition of parts, the universe might be that wild undigested medley of things in which no one trace or character of a designing architect was at all discernible" ("Nat. Theol.," ii. 1). Mr. Mill has adopted this distinction, and sees that "collocations as well as laws are necessary to the operation of nature" ("Log.," iii. 12, 16). I have taken up the subject at this point and endeavored to give the distinction greater precision. I have shown that it is between, not the laws of matter and collocations, but between the properties of matter and adjustments necessary to their operation. I have shown that the laws of matter are not simple, but complex, and imply adjustments; this is the case with the seasons, the typical forms of plants and animals; all imply a number of agents or properties combined to produce a uniform result. Such laws are not mechanical forces, but the results of mechanical forces adjusted ("Meth. Div. Gov.," ii. 1) and implying a purpose. Professor Newcomb seems to feel a difficulty in understanding how there should be anything else than mechanism necessary to explain the course of nature. And yet he has been obliged to draw this very distinction without seeing its meaning: "In this work we have to be concerned with two things—the general laws of nature, as they are familiarly called, and the facts or circumstances which determine the operation of these laws."

The Professor imagines that final cause implies "interference" and "miracles," and says: "We are not to call in a supernatural cause to account for a result which could have been produced by the action of the known laws of nature." But according to the view of the great body of the supporters of final cause, and according to the view now presented, we do not need to call in a "supernatural cause," for all may be performed by the known laws of nature. Nor do we need an interference to bring about the special designs of God, say to send blessings, when God so intends it, to reward the good; or judgments when He means to arrest the evil, or to give an answer to prayer for things agreeable to His will. There is no interference with the machine in a factory when it lets off its cotton, or its linen thread, or its paper; it was planned and adjusted for this very purpose. The grain-reaper is all mechanical, and it has no conscious design; but it throws off and binds its sheaves for an evident purpose. So in the far grander machinery of nature it is arranged that good is encouraged and evil so far restrained and punished. True, the mechanical forces work blindly: they know not and do not care for the consequences; but these were all foreseen by One who appointed them and arranged them for the accomplishment of grand purposes, and small ones—as we reckon them; for the progress of the world in knowledge and civilization, to adorn that lily, to feed that raven, to secure that the sparrow cannot fall to the ground, and protect, in answer to prayer, the widow and the fatherless.

I could show, if the time allowed or the subject required, that there is a wonderful correspondence between the scientific doctrine of the uniformity of nature and the Scripture doctrine of foreordination. They are the same truths; the one seen from below and from the earth, the

other seen from above and from heaven. Both imply that every thing is fixed ; but both also imply that every thing is arranged to accomplish special, and these beneficent, ends. Nature is uniform, and as we perceive it to be so, we proceed to use that very uniformity. Every thing is ordained, and believing that prayer is one of the ordained means, we use prayer to secure our ends—these ends being agreeable to His will. Because nature is uniform, we do not, therefore, on account of speculative difficulties, refuse to toil for our food. Just as little does the Christian, because of infidel objections, refuse to pray for blessings such as God is ready to give ; and he finds that the blessing has been ordained and comes at the proper time, and in answer to the prayer which has also been ordained, and this to secure its end.

Professor Newcomb quotes, without naming me, my defence of Providence in my work on "The Method of the Divine Government," and objects to my statement that a rock may fall at a prearranged moment and kill a person beneath it. He says "the moment is fixed entirely by antecedent circumstances, such as the solubility of the rock and the amount of water which percolates over it. At that very moment the rock begins to fall." Now I agree with all this. But he himself has admitted that there are "facts or circumstances which determine the operation of these laws." The question arises who arranged these "facts or circumstances," which are needed, however far we go back beyond the nature of the rock and the water, and which imply an arrangement from the beginning? He acknowledges that if we had sufficient capacity we could from a knowledge of the causes (including always their adaptations) predict all that would follow. But if this be so, may we not conceive of a Being who not only foresees but has arranged all that follows? That Being might so

arrange them that special ends are accomplished, and these such that they are obvious to every thinking mind.

Nor are we, in discovering these ends, going into the region of speculation, to which the Professor allots every thing but mechanical cause. He talks of science, meaning mechanical, concerning itself "with phenomena and the relations which connect them." I am sure that the same intelligence which can discover the connections and relations in mechanical cause is all that is needed to discover the combination of causes which constitutes final cause. As M. Janet puts it, "The error of the scientists is in believing that they have eliminated final causes from nature, when they have shown how certain effects result from certain given causes." "We must not say 'that the bird has wings in order to fly; but that it flies because it has wings.' But wherein, I ask you, are these two propositions contradictory? In assuming that a bird has wings in order to fly, must not its flight result from the structure of these wings? Consequently, because the flight is a result, is it right to conclude that it is not at the same time an end? Would it then be necessary, in order to recognize final causes, that you should see in nature effects without a cause or effects disproportioned to these causes?"

We are in danger at this present time of a whole swarm of young naturalists, following one or two leaders, attacking final cause without knowing what it means. We are happy, in these circumstances, to have a work by a French philosopher which rests the doctrine on the proper footing, and corrects the misapprehensions of objectors. It is not necessary to give an epitome of M. Janet's "Final Causes." Those interested in the subject will go directly to the work now so accessible. Any one perplexed may here have his thoughts cleared up. Those who would oppose final cause must attempt to answer it, and as they do so they may find

every objection to the doctrine effectively disposed of. He shows first as a matter of fact, and this independent of any theological bearing, that there is finality or teleology in nature. He founds "the existence of the final cause on this principle, that when a complex combination of heterogeneous phenomena is found to agree with the possibility of a future act which was not contained beforehand in any of these phenomena in particular, this agreement can only be comprehended by the human mind by a kind of pre-existence in an ideal form of the future act itself, which transforms from a result into an end—that is to say, into a final cause." He shows, secondly, that this teleology implies an intelligent cause.

He is particularly successful in showing that development, so far from superseding final cause, implies it throughout. Hugh Miller had said, in criticising the "Vestiges of Creation," that development does not affect the argument for the Divine existence. Professor Huxley allows this fully. Professor Asa Gray discovers an order and design in development. But M. Janet has discussed the subject more fully. No one will maintain that development is a simple mechanical law. It is the law of a most complicated correlation of forces, most of which are as yet unknown. When these are detected, by some Newton of physiology yet to appear, it will be seen that development, always kept within its proper sphere, more perhaps than any other process of nature involves a complexity of adjustments all tending toward a point, the preservation, and I believe the gradual elevation, of plants and animals.

Professor Newcomb's discourse is on the Course of Nature. But there is vastly more in that organized course than he and other scientists are noticing. I have endeavored to spread out that rich web, of which the forces which he has looked at are the mere threads. I have proceeded on

the fourfold explanation of nature by Aristotle, only modifying it somewhat to adapt it to modern science. All that I insist on is that nature cannot be understood, except by such principles as those I have been unfolding. I discover not only force which hurries on like a railway train, but rails to restrain it and intelligence guiding it. I find not only mechanism, but machines constructed for ends. The mechanical doctrine, if carried out exclusively, would strip nature of all that endears it to us—of all its sunshine, of all its beauty and beneficence, and leave nothing to call forth our admiration, our gratitude, our love. A skeleton is an interesting object to an anatomist, but I love to see it clothed with form and color and expression. I am interested in the restless activity of nature, capable of working such effects for evil or for good ; but I do not feel assurance, and my soul is not elevated to adoration till I see the powers harmoniously joining to produce regular laws, and types after their kind, and intelligible species, and special ends of support and benignity. Pythagoras uttered a profound truth, and had doubtless glimpses of its meaning, when he said that if men's perceptions were sufficiently acute they would hear the music of the spheres, being, I may add, the voice of One boldly represented by an old prophet as “joying over His works with singing.”



DEVELOPMENT

WHAT IT CAN DO

AND

WHAT IT CANNOT DO

BY

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DEVELOPMENT

WHAT IT CAN DO AND WHAT IT CANNOT DO.

THE phrases Development and Evolution, so frequently used in the present day, have much the same meaning. Both point to one operation seen under somewhat different aspects. Development is the process going on, whereas evolution rather refers to the process as we look back upon it. We speak of the seed developing into the plant, and the plant being evolved from the seed.

There is a constant employment of the phrases and a continued reference to the process. But there is an equally persistent avoidance of an explanation of its precise nature. Instances, many rich and varied, are given, and inferences legitimate and illegitimate are drawn; but there has not been a wise, judicious, and scientific attempt to explicate its components, to spread out its contents, and prescribe its boundary.

The phrases are used to cover all sorts of meanings—"it is a great sheet let down by the four corners upon the earth, wherein are all manner of four-footed beasts and creeping things of the earth, and fowls of heaven." Evolution in itself is a great vehicle moving on from age to age, and from world to world, carrying with it all sorts of wares, precious and baser metals, suns and soils, flowers

and weeds. Scientific men discourse profoundly of the development of worlds and systems of worlds, of plants and animals, of individuals and of species, from the monad on to man. But we hear and read also of the development of the resources of a country, of its wealth, its mines, its gold and silver; its crops and corn, its wheat and fruits; of its sheep, cattle, and horses; of its industry, its trade and commerce; of its cities, their streets, houses, and harbors; of its education, its colleges and schools. They give you histories of the development of the sciences of astronomy, chemistry, and géology, of literature in prose and poetry; of language from its simpler forms up to the higher, such as Greek, German, or English; of the fine arts, as painting, sculpture, and architecture, from their ruder to their highest shapes; and of the useful arts, as masonry, carpentry, and engine-making. They talk, too, of the evolution of things from a simpler to a more complex state; of pottery, of wax-work, of metal-work, of vases, of dinner-sets, and tea-cups. It must surely be a comprehensive phrase, or quite as possibly a loose and ambiguous one, which embraces all these things and a thousand more.

In these circumstances it is surely of moment, when any one is talking of development, for or against, to insist on his telling us precisely what he means by it. "I am sick," says the man of common sense, who is not to be taken in with high-sounding phrases, "of this pretentious power; I prefer the old way of speaking, when it was believed that all things came from God." But I ask this man, who is after all making large pretensions to uncommon sense, whether he is prepared to affirm that he was not developed from his good father and mother; whether he, the man of forty, has not grown out of that boy whom he pleasantly remembers going to school at the age of six. But I am a religious man, he tells us, and I am sure that

God and not development guides the universe. But if he will listen to me, I venture to ask him whether he has any right to dictate to Deity how he shall govern his own world ; whether by development or in some other way ; whether God may not have made this man himself to grow by development ; and whether the same God has not evolved the Christian from the Jewish faith, and the Jewish from the patriarchal. When we lay down the rigid rule for ourselves, that we explain beforehand what we mean by the phrases we employ, we are in a better position to require the same on the part of our opponent, and to insist on knowing what he means by the evolution he is defending. An evolution out of nothing ? An evolution without a God to set it agoing or to guide it ? An evolution of life from the lifeless ? Of mind from the mindless ? Of man from the monkey ? Of the monkey from the mollusc ? Of the mollusc from the monad ? Of all from the senseless molecule ?

SECTION I.

DEVELOPMENT IS AN ORGANIZED CAUSATION.

DEVELOPMENT is evidently not a simple power in nature, like mechanical force, or chemical affinity, or gravitation. It is clear that there is a vast, an incalculable number and variety of agencies in the process, whether it be the development of a sun from star-dust, of the plant from its seed, of the bird from its egg, the horse from its dam, of the threshing-machine from the flail, of the reaping-machine from the reaping-hook, of our present kitchen utensils from those used by our grandmother. The question arises : Is there any unity in "the thousand and one"

things that act in the process? I believe that there is. Let us inquire what it is, and this will settle for us what truth and what error there is in the common expositions, that is development of developments.

The one common quality in the process as denoted by the phrases is, that one thing is developed into another thing, and that one thing is evolved from another. But it is universally regarded as settled that when one thing produces another, or is produced out of another, it is by causation. It follows that there must be causation in development. Causation necessitates development. This follows from the nature of cause and effect as it is commonly apprehended. It follows more particularly from the view which I have given of Energy in the paper on the subject in this series. I have shown that in physical action the cause always consists in two or more bodies which act on each other, and that the effect consists of the same bodies modified; that the ball A striking the ball B constitutes the cause, and that the effect consists of the ball B gaining the energy which A loses. But I need not insist on this here, as whatever be our theory of causation, the cause must be regarded as developing the effect, and the effect as evolved from the cause.

It has been generally admitted for the last two or three centuries (it was anticipated in a vague way from the commencement of reflection) that causation works through all nature, not only divine causation but physical causation, that is, that the ordinary occurrences of nature are produced by agents acting causally. In other words, fire burns, light shines, and the earth spins round its axis and rotates around the sun, and as the issue we have heat and light, and the beneficent seasons. Men of enlarged minds do now acknowledge that in the doctrine of universal causation, of God acting everywhere through second causes,

there is nothing irreligious. On the contrary, the circumstance that God proceeds in a regular manner which can be anticipated, is evidently for the benefit of intelligent beings who can thus so far foresee the future and prepare for it and act upon it. But causation leads to development. If there be nothing irreligious in causation, as little is there impiety in the development which issues from it. It will be shown that development by causation is the plan by which God carries on his works, thus connecting the past with the present, and the present with the future. It was my privilege in my earliest published work to justify God's method of procedure by natural cause and natural law, as specially adapted to man's constitution.¹ I reckon it as a like privilege in my declining life to be able to defend God's way of acting by development, which gives a consecutive unity to all nature, and as a stream from the throne of God flows through all time, widening and deepening till it covers the earth, as the waters do the sea, with the riches it carries.

But development, while it is carried on by causation, does not consist of a single chain with successive causes and effects as its links. The causes as they operate combine and the effects are joint, and we have a great reticulated machine. Development is essentially a combination of causes. It is a corporation of causes for mutual action, an organized causation for ends. The past has developed into the present, which will develop into the future. The configuration of the earth, its hills and dales, its rivers and seas, which determine the abodes and industries of men, and the bounds of their habitation have been produced by agencies which have been working for millions of years. The present is the fruit of the past and contains the seed

¹ Method of Divine Government, Physical and Moral.

of the future. The plants now on the earth are the descendants of those created by God, and the ancestors of those that are to appear in the ages to come.

There is through all times, as in the year, a succession of seasons ; sowing and reaping, sowing in order to reap, and reaping what has been sown in order to its being sown again. This gives a continuousness, a consistency, to nature amidst all the mutations of time. There is not only a contemporaneous order in nature, there is a successive order. The beginning leads to the end, and the end is the issue of the beginning. This grass and grain, and these forests that cover the ground, have seed in them which will continue in undefined ages to adorn and enrich the ground. These birds that sing among the branches, and these cattle upon a thousand hills, will build nests and rear young to furnish nourishment and delight to our children's children in millennial ages. Every naturalist has seen a purpose gained by the nutriment laid up in the seed or pod to feed the young plant. I see a higher end accomplished by the mother provided for the young animal. That infant is not cast forth into the cold world unprotected : it has a mother's arms to protect it and a mother's love to fondle it. Development is not in itself an irreligious process ; every one who has been reared under a father's care and a mother's love will bless God for it.

SECTION II.

DEVELOPMENT IS CAUSATION WORKING IN AN ENVIRONMENT.

SCIENCE has not determined, and never may be able to determine, what are the original constituents of the universe. Some are fond of looking upon them as atoms, some represent them as centres of force, others will allow them to be

only centres of motion—with nothing to move! Whatever they be, there must be millions of millions of them working in the knowable world.

It is by no means certain that we have been able to determine what is the number of elementary bodies in the world. The ancient Greek division into earth, water, air, and fire, merely pointed in a rude way to a division of states—the solid, the fluid, the vaporous, and the ethereal. The number of elements is supposed for the present and provisionally to be sixty-five, but most chemists believe that some of these may be resolved into components.

It would be wrong in us to affirm dogmatically that we know what are the varied forces, or, as some would prefer expressing them, the powers of producing motion. One point, however, has been established in our day, that all the physical energies are in a sense one; that they are all—be it the mechanical, chemical, vital, electric—correlated, and that their sum, real and potential, cannot be increased or diminished.

What we have to do is to observe these entities, elements, or powers as working, and to notice in particular that they operate in the way of evolution.

These existences, with their energies, combine to form causes, and these form combined or organized causes. All of them have affinities with each other. Some of these are stronger than others in themselves, or from the relative position which they occupy. These combine in their action. We may represent the agencies at work by the letters of the alphabet, A, B, C, etc. A number of these, say A, D, P, S, may join and produce powerful individual occurrences—an earthquake, a volcano, a conflagration, a revolution. Or they may abide and produce general issues, continued for hours, or days, or years. Thus the winds combine and go in currents, and we have the trade-winds. Thus the

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waters of the ocean are made to flow in one direction, and we have the Gulf Stream, and the cold wave from Labrador.

But these organized causal operations do not embrace, in at least an appreciable or calculable manner, all the powers or causes of the universe; they comprise only a portion as in conspicuous operation. The causes that produce a cyclone in the Indian Ocean, may have no perceptible connection with those that produce a flood in the rivers of America. The moral agencies that produce a revolution in Paris, may have no visible relation with the discontent which leads the Indians to rise and murder their white neighbors in America. But there is no set of causes in our world so isolated that they have no connection with surrounding causes. Possibly A, D, P, S have some relationship with B, E, Q, T. These other powers will so far act on the organized causation and modify it, it may be in the way of strengthening or weakening the tendency, or giving a special direction to the stream. While they do so, they will themselves be affected, perhaps be absorbed or driven off. The winds and ocean currents are all affected by the nature of the land over which they travel. The tides are directed by the nature of the shore, and the seasons, by, it may be, various solar or lunar influences. Every combined mundane agency has a sphere, and this sphere has an atmosphere, or an environment as it is called, which it so far sways, and by which it may be swayed.

SECTION III.

REGULAR RESULTS FROM COMBINED CAUSATION AND ENVIRONMENT.

THE former is a stream receiving contributions as it flows on from the other, which constitutes its banks, that are watered by it, it may be formed by it. From the inter-

action, specially from the unions and separations, there follow certain regularities which are worthy of notice.

There are courses which go on for a time and then disappear. The wind arises from there being a comparative vacuum somewhere, into which it rushes, and then sinks because the inequality is so far filled. There is a high tide produced when the moon and sun are pulling in one way, but it ceases when the two are not acting in unison. There are epochs in which certain motives or impulses prevail—periods of war and conquest, periods of commercial enterprises, periods of the cultivation of the fine arts; these have public opinion for a time in their favor, and then give way before something else. In all such cases the combination of the causes producing the movement is loosened and new combinations are formed.

There are results that abide the same from year to year, and from age to age: that stream has for a thousand years risen in the same fountain, among the same hills, and flowed through the same valleys into the same creek of the ocean. Thus there are plants and animals now living which have not been visibly changed since they appeared millions of years ago in the early geological ages. The Chinese have continued much the same in character, occupations, and mode of life, for thousands of years. In all such cases the same causes have continued to act and produce the same effects. In other cases there have been irruptions, convulsions, and wars which have produced new modes of life; such, for instance, was the irruption of the hordes from the northeast upon the decaying Roman empire.

The most curious instances of regularities are those which are periodic. A certain combination of causes produces certain issues, and is then dissolved, to be succeeded after a certain time by the formation of a like combina-

tion and the same issues following. It is thus that at certain seasons there are daily sea-breezes and daily land-breezes. As more marked and obvious we have the seasons. "While the earth remaineth, seed-time and harvest, and cold and heat, and summer and winter, and day and night shall not cease." Here we have sun and seed and soil concurring to produce an orderly series of events which run their course and are succeeded by a like series. Malarial influences are introduced into the system, which take a certain time to work and to be cast off; and we have diseases lasting four days or ten days or fourteen days. We have such a periodic process in every plant springing from a seed, and every animal from a germ, having a growth and an average life and then dying, but first producing a new life. We have such periods in the movements of the heavenly bodies, as in the precession of the equinoxes.

It is more to our present purpose to remark that in development there is usually progression. At times indeed there is degeneracy, as when plants do not thrive in a niggardly soil, and animals get weaker in a deleterious climate. But, upon the whole, there has been an advance in our earth from age to age. The tendency of animal life is generally upward, from all fours to the upright position, from which men can look up to heaven. There are species of plants and animals which have become larger and more robust. Geological causes made our earth fit for the abode of man, who had cereals and cattle provided for him. Human beings have come to occupy places which in earlier ages were handed over to wild animals. There is now a larger amount of animal food than in any previous age. As the ages roll on there is a greater fulness of sentient life, and a larger capacity of happiness. The average life of human beings in civilized countries is in-

creasing. The intellectual powers have been made stronger and firmer, like the trunk of a tree, and the feelings, like the flowers, have been made by culture to take a fuller expansion and a richer color.

Under this head may be placed those grand generalizations which have been so magnified by Herbert Spencer in his "First Principles." He assumes a Persistence of Force in the universe, derived from an unknown and unknowable power beneath it. This leads to a constant differentiation and integration; in simpler terms, a separation of elements, and again an aggregation. He shows that "any finite homogeneous aggregate must lose its homogeneity, through the unequal exposure of its parts to incident forces." Hence the instability of the homogeneous and the perpetual motion in the universe. This scattering issues in an integration. The result is to change an indefinite homogeneity into a definite heterogeneity, and then aggregates of all orders are evolved. Everywhere there is a change from a confused simplicity to a distinct complexity, from a diffusion to a concentration. But opposed there may be a more powerful attraction which separates and diffuses the aggregate: "Evolution and dissolution as together making up the entire process through which things pass." "There is habitually a passage from homogeneity to heterogeneity, along with the passage from diffusion to concentration." This may be expressed in terms of Matter and Motion, "and if so, it must be a statement of the truth that the concentration of Matter implies the dissipation of Motion, and that, conversely, the absorption of Motion implies the diffusion of Matter." In the end, to the vast aggregate, even to the earth itself, Dissolution must eventually arrive, and "universal Evolution will be followed by universal Dissolution."

These generalizations are very wide, and the conclusions

far reaching. Possibly there may be gaps in the processes. The giant, in marching on with his seven-leagued boots, may have overlooked many agencies which modify his theories. He is wrong in declaring that the power underneath the persistence of force is unknown and unknowable. According to his own account it is so far known, it is known to be a power, and a power persisting and working certain effects. It can be shown to be a power characterized by wisdom and love. He omits certain powers which are as patent as those he notices. In particular he regards mind as consisting of nerves, and overlooks all its special properties—of intelligence, conscience, and will. When these are introduced they give a new, and, I venture to say, a juster and more attractive aspect to the whole of nature. I am not satisfied when I find myself and my friends represented as mere developments from homogeneous matter, produced by differentiation. But I am willing to accept his generalizations so far as the physical powers of nature are concerned.

SECTION IV.

EVOLUTION IN INANIMATE NATURE.

“EVOLUTION,” says Herbert Spencer, “is a change from an indefinite incoherent homogeneity to a definite coherent homogeneity through a continuous differentiation and integration.” I am willing to take this doctrine, but I have to unfold it in my own way, which will be less technical, but fully as accordant with facts.

In nature there is a very large, but still definite number of bodies, all acting causally. As they act a number are drawn into aggregates by their mutual attractions or af-

finities, or their proximity. The action is of the nature of causation ; I call it a combined or organized causation. Thus, in our mundane system, we have the sun, planets, and moons, with a certain shape—an oblate spheroid—with a rotation round their axes and round each other. These may be regarded as developments produced by differentiation. As a result of the collocation of the sun and the earth we have the seasons, with their regularities and their irregularities. We have also had the stratified structure of the earth, and mountains heaved up, and valleys between. All this has arisen very much from combined causation. In the aggregates produced there are internal changes going on. Thus the earth is supposed in the geological ages to have become cooled and fitted for the abodes of animated beings. But the combination of causes is in the centre of an immense number of other causes, which may be called its surroundings, or, more technically, an environment. The aggregate and its environment act on each other and produce farther changes, it may be in accumulation, say in adding plant-fostering soil on the earth's surface, or washing away seas and increasing dry land.

But there is a second characteristic of development observable everywhere in nature, and that is a progression. There is an advance from a homogeneous to a more differentiated state in which new aggregates with their functions appear. This may be produced by accumulations of forces breaking out in convulsions, which change so far the face of the earth ; or more frequently by small increments, as the growth of soil by the decay of plants.

In all this I discover order and design. I do not see that the constituents of the world, its atoms or molecules, necessarily produce beneficent results. If left to themselves they might produce evil quite as easily and naturally as good, and might have been formed into destructive

machines and pestiferous creatures, into flaming meteors with burning worlds, into serpents and wild beasts devouring each other and arresting all forms of beauty and beneficence, and yet incapable of dying. But, instead of this, ~~these~~ these million agencies combine to accomplish good and benign ends, so as to show that there has been a mind disposing them and an end in view.

Let us notice, first, that the combination of elements acting as causes has produced general laws and beneficent order : in the seasons, in the growth of the plant—first the blade, then the ear, then the full corn in the ear—in the animal enjoying its time, and handing down its life to another generation. All this is not the action of simple properties acting fortuitously or fatally ; it is the result of the adjustment of numerous properties of matter—gravitating, mechanical, chemical, electric—all conspiring toward an end.

Secondly, the combination accomplishes special ends, such as those so happily illustrated by Paley and other writers on natural theology. There are, for example, ~~the~~ the joints of the bodily frame composed of bones that fit into each other for good ends, namely, easy and convenient movements ; the firm clasping of the hand, and the simple forward and backward motion of the fingers, and the ball and socket at the shoulder admitting rotation all round. There are the bodily senses—the eye, the ear, and touch—so delicately adapted to the external world, with which they make us acquainted. There is the whole animal frame, made up of various parts, yet all combining into a living machine of exquisite structure.

Not only is development, when properly understood, not inconsistent with religion, it will be found that the combination and adaptation in it clearly argue design. Sooner or later there will be written a work on natural theology,

after the manner of Paley, showing that as there are plan and purpose in the well-fitted limbs and organs of animals, so there is also design, and this quite as evident and as wondrous in the way in which, by a process running through ages, the bones and muscles have been adjusted to each other to produce the horse we drive or ride on. There is a manifest beneficent end in the knittings of our frame, but there is quite as palpable a purpose in the way in which all the parts have been moulded in the geological ages, and handed down by heredity.

I therefore see design in development. There is an obvious end and a means arranged to accomplish it. We notice purpose evident in the development which man is ever accomplishing. The farmer uses a series of agencies to secure a crop: he ploughs, he harrows, he sows seed, he weeds, and in the end he gathers in a crop. The teacher lays out a plan for developing the faculties of his pupils: he imparts knowledge, he corrects, he stimulates, and he reaches his aim, the improvement of the mind and a fitness for the duties of life. We are ever noticing cases in which there is need of co-operation to accomplish an end. A house is built and furnished because a number of persons have done each his part—the mason, the carpenter, the plumber, the slater, the glazier, the upholsterer. A city becomes rich because the merchants have been far-sighted, the manufacturers expert, and the tradesmen skilful and industrious. The country prospers because the master and the servant, the schoolmaster and the minister of religion, are all and each doing their part. But there are still more wondrous evidences of plan, and in the succession of the seasons, of the grass and grain and trees, and in the living creatures advancing in fulness and strength, in activity and beauty. It is not in the single operation that we discover evidence of a purpose so much as in their

organization and orderly succession and development. Development is a sort of corporation in which each part, like the citizen, fulfils its office.¹

Evolution is not, any more than gravitation, chemical affinity, or any other power or law of nature, an irreligious process. Spencer accounts for all its operations by the persistence of force beneath, and behind which he feels himself obliged to place an unknown power. I, too, am obliged to place such a power; but to me it is so far a known power. There is more in the production than the persistence of force; there is an arrangement of all the evolved and involved powers to work for an end, and in this I perceive design and intelligence. I do not stand up for a development any more than I do for a gravitation independent of God. I see God in the persistence of force, and in the beneficent way in which it works. I can see a good purpose worthy of God served by universal gravitation, in binding together all the parts of the universe, however widely sundered. But I can also discover it to be a beneficent arrangement, whereby by evolution the present is connected with the past and the future, and the most remote times are brought together. I do not say that God could not have accomplished these ends in some other way, but he has actually effected them by means of causation and evolution, and I bless him for it.

I see God in development throughout, and from beginning to end. Because a rose, a dog, or horse is gendered by natural causes, it is not less the work of God. Our finest roses are derived from the common dog rose of Europe (*Rosa*

¹ I am not here constructing or defending the theistic argument. If it be objected that the existence of pain sets aside teleology, I simply say that I am not to enter on the subject of the mystery of evil, but I hold that there may be evidence of the existence both of suffering and of love in one and the same world.

canina) : that rose with its simple beauty by the roadside is the divine workmanship ; but so is the rose with the fullest form and the gayest color in our gardens. God, who rewards us for opening our eyes upon his works, gives higher rewards to those who, in love to him, or to them, bestow labor and pains upon them. Dogs, it is said, have descended from some kind of wolf. This does not make the highly developed shepherd or St. Bernard dog, with their wondrous instincts, not to be the divine workmanship. Just as little does the hypothesis that our living horse is descended from the pliohippos, and this from the miohippos, and this again from the small eohippos, which used to tread with its five toes on marshy ground, prove that the animal we ride on, so useful and so graceful, so agile, and so docile, is not the creature of the Creator who formed it and endowed it with the power of evolution.

SECTION V.

DEVELOPMENT IN ORGANIC NATURE.

THERE is no difficulty presented to the religious man in development, so far as it relates to inanimate nature ; he may believe in evolution as a mode of divine operation. Doubts and difficulties arise when he is required to assent to its universal application to every form of organized being. But surely if it exists and is prevalent in dead matter without being atheistic it may also be allowed in plants and animals.

It is admitted on all hands to have a place and power in the individual plant and animal, both of which proceed from the seed or germ, take a typical form, and have a normal time to live and produce an offspring. There is a

sense in which the oak is in the acorn, the child is father of the man. Both grow partly by internal powers and arrangements, and partly by external nourishment and accretions from day to day, and from year to year. If any one regards this as taking place independent of God, he is so far an atheist. If he believes it to be accomplished by the power of God, he is thus far a true theist, and his heart may be filled with adoration and his mouth with praise.

Not only is there development in the individual, but also in the succession of individuals. There is here a rotation, the egg from the living being developed into a new living being, producing a new egg. It is equally true that the bird is from the egg and the egg from the bird, and both by evolution. No one will speak against such an arrangement, as it provides children for the comfort of parents and parents to care for children.

But disputes arise when development is carried farther. It is allowed that there is development in the individual, but may it also take place in the species? In other words, can one species grow out of another? To clear the ground for a fair discussion let us look at what is admitted.

It is allowed, nay, maintained, that there is such a thing in nature as distinct species, genera, and orders. These, in ordinary circumstances, cannot be changed into each other. The lily cannot be transmuted into the rose, nor the sheep into the goat. In the common operations of nature every plant and animal is after its kind or species. Figs do not produce thistles, nor do thistles produce figs.

It is also admitted by all that species develop varieties.¹

¹ Prof. Asa Gray writes: "The facts, so far as I can judge, do not support the assumption of every sided and indifferent variations. The variations do not tend in many directions; the variations seem to be an internal response to external impressions."

I believe there is no one tree—oak or pine, elm or birch—precisely the same in the old world and in the new. What a variety of pigeons are there, all descended, it is supposed, from the rock pigeon. These varieties are produced internally, largely by external circumstances, that is, by the environment. In a barren soil and a severe climate an oak will become dwarfed and its descendants will be the same. The dog can be trained to point at game, and a breed will be produced possessing this aptitude. It has to be added that these varieties tend to return, if the environment does not continue to prevent it, to the original type of the species. The cultivated plant, cast out of the garden, will be apt to go back to its wild state. It is usual also that when animals of different species have paired, the horse and the ass for instance, the offspring—the mule—is not prolific and dies out.

We have approached the battlefield gradually, but now we are in the midst of the fight, and we may watch it, even though we do not take part with either side. Two grand questions are before us. One relates to the production of the species at the first. Were the species of amœba, of molluses, of insects, of fishes, of reptiles, of mammals (the consideration of man had best be deferred) created, very much as they now are, by the immediate fiat of God at the beginning, or as the ages rolled on? Or were they evolved out of a previous material by internal laws of development and by constant increments from the environment? The second question is intimately connected with the first, In rare and extraordinary circumstances can new species come forth out of the old, as varieties do, and these go down by heredity?

The opinions of the ancients on such a subject are of no value, as they have no scientific basis. Many deep thinkers believed in spontaneous generation, and supposed that

lower animated creatures came out of the sea or bubbled out of marshes, and they did not see anything irreligious in this, as they, or at least a number of them, believed it to be done by a divine power. In the earlier centuries of the modern era, naturalists were carefully observing the species, genera, and orders, with the view of classifying plants and animals, and they were fond of regarding kinds as fixed and immutable. Religious people were inclined to regard all natural species as created by God, and this required, when they came to believe in geological succession, a perpetual creation down to the period at which man appeared. Since the days of Mallet and Geoffroy St. Hilaire there has been an ever-increasing body of naturalists inclined to account for the origin of species by natural law.

Who is to settle these questions, or rather this question, for it is one? This can be done only by long and varied observation and discussion. I certainly feel as to myself that I cannot decide it. The tendency of modern speculation has all been toward the prevalence of development by natural causation. Yet there are phenomena of which it may be said that they cannot at this present time be explained by any natural process. But there is one point on which I am quite as much entitled to speak as any other is: Does religion require us to insist that species and orders in natural science are all fixed forever? that in no circumstances can a new species be produced by natural law?

It is certainly conceivable that the God who created all things should also have created by a direct act, without a medium or without a process, the first member of every one of the hundred thousands of plants and animals on the earth, and then allowed, or, rather, enabled, them to go down by an evolutionary heredity. But it is quite as possible and equally conceivable that God may have organized

the species out of the previously existing materials, even as he made man's body out of the dust of the ground. The essential elements of organisms are oxygen, nitrogen, hydrogen, carbon, with sulphur and iron, and aqueous fluids. These are represented as being the least volatile of the elements and the most permanent in their combination, and because of these qualities they may have been brought and kept together in organisms. It is quite conceivable that out of the constituents of the universe God may have arranged that these should combine to form those aggregates which we call plants and animals, and as the ages run on, to form new species in rare and exceptional circumstances. It has to be added that these elements will not of themselves form living beings without some inherent or superadded hereditary vital power, a subject which will have to be considered separately. Now, it is not for me to say beforehand which of these methods, immediate or mediate, God should adopt. The former of these might seem to bring in God more directly. It certainly makes him interfere more frequently with the works of nature; but then, when he is thus interfering, he is interfering with his own works, which we may suppose to have been planned from the first in infinite wisdom. If it be found in fact that he has chosen the latter method, we are just as much entitled in that case as in the other to discover the action of God, and we may without presumption discover evidences of beneficence. For God does thus secure not only a connection of his works with himself, but a connection of them one with another; and thus, on the one hand, there is a certain stability in natural classes, while, on the other hand, there is a sufficient amount of variety and progression to suit the organism to new positions and provide for the survival of the fittest, which is certainly a good provision.

A number of theories have been devised to account for the production of what seem to be new species. Darwin gives prominence to the principle of Natural Selection, with its accompaniment the Survival of the Fittest; but acknowledges in his later editions that he had attached too much importance to it. The phrase is not a very happy one, as it seems to imply choice, which certainly has no place in the process. But it points to a fact that the weakest plants and animals are most apt to die early and leave no progeny, whereas the strong live and have a more powerful offspring. I do not purpose to give all the theories, or to examine them critically. They differ chiefly in this, that some attach more importance to the operation of the internal elements, others to the external circumstances or environment. Some hold that there is an action producing change, variety, and progression in the components and structure of the organism, in the germ or in its growth. Among those who thus look for the cause of the development in the organs themselves may be mentioned Lyell, Mivart, and Professor Owen, in England; Professor Gray, and Professor Cope in America; and, in Germany, Braun, Gegenbaur, Heer, Nägeli, Virchow, etc.¹ Most of them seem to make the development proceed by gradual steps, scarcely if at all observable; others through a metamorphosis of germs and heterogenetic leaps. Perhaps we may have to take with us both the internal and external causes, in some cases the one, and in some the other being the stronger. The development of the individual certainly involves both an inward power of

¹ We have an admirable work on *The Theories of Darwin*, by Rudolph Schmid, excellently translated by G. A. Zimmermann (Jansen, M'Clurg & Co., Chicago). This work is at once philosophical and scientific, and being now so accessible, renders it unnecessary for me to state and criticize the theories of evolution.

growth, and also external support and nutriment ; both are necessary to produce the full form, and the seed which propagates the species. There may be the same principle in the production, in rare circumstances possibly only in the early geological ages, of new species. It is conceivable that in the earlier times aggregates might not have been so fixed as to render germs and species absolutely unchangeable. They seem now to be so determined that the species of animals and plants are comparatively permanent.

It is always to be remembered that in vegetable and in animal development there is more than mechanical energy. Mr. Spencer can scarcely be said to have perceived this ; certainly he has not given it its due place and prominence. There is evidently a chemical power in exercise, and this cannot be said to have yet been resolved into mechanism. Then there is a power, which without defining it, was simply called vital by our older naturalists, and which, however it may have been produced, and whatever may be its nature, is in actual operation higher than either the mechanical or chemical. Even Darwin is obliged to bring in a panzoism to account for the genesis and continuance of organisms. Mr. Spencer himself has to use physiological units to explain heredity. What are these but particular exhibitions of the old vital forces ?

Perhaps the most remarkable example of this physiological development is to be seen in the progress of the embryo in the womb, as discovered by Von Baer. The germ is apparently (it cannot be so really) much the same in all animals except the lowest ; but it becomes differentiated and takes the form of the polyps, the worms, the molluscs, and arthropods, and goes on to the fish, the amphibia, the reptiles, to birds and mammalia. Now this progression, as every one knows, is very much the same

as that of the animal races in the geological ages. This does not imply, as I understand it, that the germ of the mammal, in its ascending process, ever does become a bird or a reptile. It means that there are combinations of agents in the germ and its surroundings, which proceed, that is, are developed after a certain manner, and that from a prearranged combination of matters and forces there has been a like or parallel progression in the whole animal kingdom. All this implies more than mere mechanical energy or persistence of force. Powers are implied, which, in the present stage of science cannot be resolved into the mechanical. Yet in no human machine can we discover more clearly the evidence of a plan and purpose. With these new powers acting, there is now a higher manner and form of development, and we have one generation of intelligent and moral beings succeeding another.

SECTION VI.

WHAT DEVELOPMENT CANNOT DO.

WHILE it can do much, it may not be able to do everything. There is a tendency among eager and hasty thinkers to push every newly discovered truth to an extreme. I am as old as to remember the feeling kindled when Sir Humphry Davy made his brilliant discoveries as to electricity and chemical action. There were sciologists in our schools of popular science, book critics in our newspapers, and wandering lecturers who hastened to make electricity account for everything, for even life and mind itself. This scientific fashion, never encouraged by the great discoverer himself, soon ran and ended its course, and died out in

the struggle for existence as other and equally powerful agents came into notice. Evolution is at present running a like course. The great scientific work of the past age has been to show what it can do ; that of the coming age is to lay a restraint upon its career, and to show what it cannot do. Like all creature action it will be found to have very stringent limitations. We may fix on some of these.

I. It cannot give an account of the origination of things. This is implied in its nature and its very name. Development takes place among materials already existing. Evolution is the derivation of one thing from another thing. But the mind does seek after an origin. This has been maintained by Aristotle, and by the profound thinkers of all ages. The principle of causation insists on going back from effect to cause, and from one cause to another, and is not satisfied till it rests in an originating substance possessed of the power to produce all that follows. Evolution implies a set of acting substances. So far from accounting for these, say body with its attractions and affinities, and mind with its thoughts and feelings, it presupposes that these exist and that they are acting. The mind seems to demand an account of these ; development cannot furnish this, and has to call in a creator and organizer. Evolution simply shows a flowing and widening stream, implying a fountain, which, however, it conceals in mist.

II. It does not originate the power which works in development. That process shows us objects acting causally, but takes and gives no account either of the objects or the forces in them. To account for them, Herbert Spencer calls in what he denominates the Persistence of Force—a phrase to which some object. But call it what you please, force or power or energy, or the persistence of force, or

the conservation of energy, there is certainly such a thing, not imaginary or hypothetical but real. Spencer thereby accounts for all the action of nature. But he is philosopher enough to know that this implies something behind, beneath, or above it. He is obliged to do this by the nature and necessity of thought. He is constrained to believe this because it is impossible to conceive the opposite, which, according to him, is the ultimate test and criterion of truth. I am not disposed to put the argument in this form, but I join him in holding that we are necessitated to believe that there is a something beyond the matter and force which we notice. With him this is unknown and unknowable, and he kindly and condescendingly makes this the sphere of religion. Yet he himself is obliged to acknowledge that he knows something about it. Indeed it is impossible for him or any one to speak about it, to make any predication of it, unless he so far knows it. He knows it to be a power and to have power; and surely this is knowledge, and rather important knowledge. He everywhere speaks of a necessary "belief in a power of which no limit in time or space can be conceived." This limitlessness is surely a farther knowledge. He can tell a great deal about its working by differentiation and integration, producing happiness and virtue, causing an advance, and finally dissolving all things in a universal conflagration. Such a thing is not absolutely unknown. I agree with him in thinking that there is, that there must be, such a power. But on the same ground as he argues that it exists and is a power, I argue that we know it to be not only a power but a wise power, a benevolent, a righteous power. But evolution has not produced this power, it is the production of it.

3 III. Evolution of itself cannot give us the beneficent laws and special ends we see in nature. There is in force,

considered in itself, neither good nor evil. It is as ready to work destruction as to promote the spread of happiness. The persistence of force might be a persistence in evil. The separate agencies being blind might as readily produce confusion as order. A railway train, without a head or hand to put it on the right track, might only work havoc. In order to operate beneficently the persisting never-dying force must have collocations, as Chalmers calls them, adaptations or adjustments, as I call them, to enable them to accomplish the good ends which are so visible.

These are of two kinds. One is a general order, or what are called laws of nature, such as the seasons and the periods of animal life. I am inclined to see purposes in the very forms of animals and plants, and the manner in which they grow into their type, while the type ever advances as if to realize an idea. I discover an end in the manner in which plants and animals are produced. Two arrangements are necessary to effect this. First, there is the tendency of every living thing to produce a seed or germ. The powers necessary to accomplish this are very numerous and very complex, but all conspiring toward this one end, as if it were one of the purposes for which the plant was created. Secondly, there is the growth of the plant or animal from its embryo. This, too, implies an immense combination of arranged elements and forces. It looks excessively like an end contemplated, an idea to be realized. It looks all the more like this when we notice that the seed or germ is after its kind, and produces a new life of the same type.

I have endeavored to show in another work that in our world there is not only law and general government, but a particular providence accomplishing special ends.¹ The

¹ Method of Divine Government, Part II.

laws produce general results, but they are also made to conspire and concur and cross each other, so as to produce individual events, which, as far as we know, follow no general law. This is manifest in every part of God's government, but is specially seen in God's dealings toward his intelligent and sensitive creatures. "A sparrow cannot fall to the ground without him." Thoughtful minds have ever felt comforted by the thought that there is a God watching over them, and ordering their lot from beginning to end, sending health or disease at the proper season, gratifying their wishes or thwarting them, according as may be for their best good. All this may be done by the persistence of force, but it is by a force guided by intelligence and love. When man accomplishes any end, it is by working on materials already prepared for him. But the God who created the materials has also arranged them for the accomplishment of his purposes. There is need of a power above evolution to account for the beneficence of evolution.

SECTION VII.

NEW POWERS APPEARING IN THE AGES.

I HAVE shown that in physical causation there is merely a changed state of the bodies acting as the causes. A and B act upon each other and constitute a cause, the effect being simply A' and B' in a new state with no new bodies, and no added energy, the energy in the two A and B being the same as in A' B', with a portion in the one transferred to the other. In all such causation there is no energy in the effect which was not in the cause. If there be a new power appearing it must be superadded. But new powers have appeared.

For the purposes of my exposition, it is not necessary that I should determine what are the original bodies or powers in our world, what is their nature, and how many they are. They may be atoms, simple and indivisible, they may be molecules consisting of two or more atoms in union. These no doubt have all their powers by which they act.

Geology clearly reveals that new products have appeared. There was a time when there was no organism and no life, no plant or animal. But at a set time organized matter appeared, say protoplasm. When there was no animated being I believe that there was no sensation, pleasant or painful, and it certainly cannot be proven that there was any feeling in the protoplasm or in the plant. As ages roll on we have creatures evidently feeling pleasure and liable to pain. Organisms both in the vegetable and animal form rise higher and higher, and animals become possessed of impulses which prompt them to act in a certain way. We have now powers higher than the mechanical, we have the vital, the sensitive, and the beginning of the psychical. Häckel divides the organic world into three kingdoms—the protista, the vegetable, and the animal. He traces twenty-two stages in the rise from the protista on to man, eight of them belonging to the invertebrate and fourteen to the vertebrates. I am not disposed to sanction this pedigree and every stage of it. But it is clear that there is such an advance. In the animal kingdom there is first sensation, then instinctive impulse, then lower rising to higher forms of intelligence, distinguishing things that differ, conducting long processes of reasoning and induction, and giving us glimpses of spiritual and eternal truth. Finally, we have a moral nature discerning between good and evil, laying obligations upon us to promote the happiness, and as higher, the moral

good of man, and pointing to a judgment-day. Naturalists may be tempted to overlook these last, the high ideas of which we are conscious; but these are realities, are facts revealed to the inner sense quite as clearly and as certainly as the visible and tangible molecular and molar parts, the seed, the limbs, the joints, the nerves and brain, revealed to the external senses.

Was there Life in the original atom, or molecule formed of the atoms? If not, how did it come in when the first plant appeared? Was there sensation in the original molecule? If not, what brought it in when the first animal had a feeling of pleasure or of pain? Was there mind in the first molecule, say a power of perceiving an object out of itself? Was there consciousness in the first molecule or monad—a consciousness of self? Was there a power of comparing or judging, of discerning things, of noting their agreements or differences? Had it a power of reasoning, of inferring the unseen from the seen, of the future from the past? Were there emotions in these first existences? say a hope of continued life or a fear of approaching death? Perhaps they had loving attachments to each other, perhaps they had some morality, say a sense of justice in keeping their own whirl, and allowing to others their rights and their place in this dance! Had they will at the beginning, and a power of choosing between pleasure and pain, between the evil and the good? Perhaps they had some piety, and paid worship of the silent sort to God!

It is needless to say that there is not even the semblance of a proof of there being any such capacities in the original atoms or force-centres. If so, how did they come in? Take one human capacity: how did consciousness come in? Herbert Spencer, the mightiest of them, would have us believe that he has answered the question, and yet he

has simply avoided it. In his "Psychology" ¹ he is speaking of nerves for hundreds of pages; he shows that in their development there is a succession of a certain kind; and adds simply that "*there must arise a consciousness*"! This is all he condescends to say, bringing in no cause or link or connection. Thus does he slip over the gap—a practice not uncommon with this bold speculator.

It is pertinent to ask, How did these things come in? How did things without sensation come to have sensation? things without instinct to have instinct? creatures without memory to have memory? beings without intelligence to have intelligence? mere sentient existence to know the distinction between good and evil? I am sure that when these things appear, there is something not previously in the atom or molecule. All sober thinkers of the day admit that there is no evidence whatever in experience or in reason to show that matter can produce mind; that mechanical action can gender mental action; that chemical action can manufacture consciousness; that electric action can reason, or organic structure rise to the idea of the good and the holy. I argue according to reason and experience that we must call in a power above the original physical forces to produce such phenomena. I may admit that a body may come out of another body by the powers with which the bodies are endowed; but I say that a sensitive, intelligent, moral discerning soul cannot proceed from the elements of matter. New powers have undoubtedly come in when consciousness and understanding and will begin to act. They may come according to laws not yet discovered, but they are the laws of the Supreme Lawgiver.

It will be argued by some that there must have been all along in the atoms a latent life, sensation, consciousness,

and mind, with beneficence and capacity of choice, ready to be developed in the æons, some in thousands and some in millions of years. Those who deny that any new powers have appeared must resort to some such supposition. It may be allowed that this is a thing imaginable and possible, but there is not the semblance of a proof in its favor. Certainly there is no evidence that sentient beings could have passed through the intolerable heat of the star-dust from which our former worlds are supposed to have come. Even if we should discover proof of this, we should, in the very fact, have proof of design in the way in which these latent powers have come forth at the appropriate times, and continued ever afterward to operate in organized plants, in sentient animals, and in intelligent man. We have to choose our horn. If all the endowments now in our world were in primary molecules ready to come forth at the fit time, it is clear that they must have been the creature of an intelligence of inconceivable power. If they were not there, it is necessary to call in a subsequent creation, or at least some forthputting of Omnipotence.

Another supposition may be resorted to, somewhat more plausible, but still without any positive evidence. In water there are properties which do not appear in the elements oxygen and hydrogen. In organized matter there are powers which cannot be discovered in the components. It may be argued that in like manner at the appearances of new products there were conjunctions which produced life and feeling, consciousness and memory, intelligence and love. It may be safely said that proof is as much wanting here as in the other supposition. A necessity of thought founded on experience does indeed imply that there must be some extraordinary power called in to account for the extraordinary result which is beyond the potency of the common mundane agencies. But what this

power is we have really no means of knowing. It is certain that the power which has provided intelligence and conscience cannot be the ordinary mechanical or the chemical, or even the vital powers. These new powers imply, if not a creation, at least a providence.

The objects we are now looking at lie on the horizon of our vision and appear dim. We are constrained to call in a power to produce the effects, but whether it is to be regarded as natural or supernatural, we may not be able to say. God is working, but whether without or with secondary instrumentality we cannot determine. We may have come to a region where the difference between natural and supernatural disappears. We may have remarked that the Scriptures never mention such a distinction; they ascribe all to the will of God. The distinction may have an importance only in this lower and mundane sphere where we have worlds, but no experience of the creation of worlds. Faith and science may both be satisfied with our ascribing the whole process to a Divine Power, without dogmatizing as to how it has been acting.

Have we not, after all, the most satisfactory account of the process in the opening of our Scriptures? There is certainly a wonderful correspondence or parallelism between Genesis and geology, between the written record and the record in stone. We are to be on our guard indeed against straining either one or other to bring them into accordance. The general agreement of the two is as obvious as it is wonderful. The only difference is that the one record is sensible, while the other is scientific. The one is the account of the scene as it would have appeared to a spectator then living; the other is the conclusion drawn from careful exploration.

That there is an accordance between the Scriptures and science has been shown by the three men on this continent

who are most entitled to speak on the scientific question: Professor Dana, of Yale; Professor Dawson, of Montreal; and Dr. Guyot, of Princeton. Both testimonies give the same general account of the progression and of the order in which the powers appear. "Howbeit that was not first which is spiritual (πνευματικόν), but that which is natural (ψυχικόν), and afterward that which is spiritual." "And so it is written the first man was made a living soul; the second Adam was made a quickening spirit" (1 Cor. xv. 44-46), where we may mark the advancement from the merely living soul (ψυχὴν ζῶσαν) to the quickening spirit (πνεῦμα ζωοποιούν).

More particularly the book of Genesis represents the work as proceeding by *days*, which in every part of Scripture is employed to denote epochs; thus in chap. ii. 4, it is said, "In the day that the Lord God made the earth and the heavens." Regarding the days as epochs, there is a very remarkable parallelism between the order in Genesis and the order in geology, quite as much so as that between the stages in embryology and that in paleontology pointed out by Von Baer.¹ In the beginning or origin (ἐν ἀρχῇ) God created the heavens and the earth, and gave the original constituents their potencies which began to act. The earth was at first without form and void, with only the materials, or star dust, as Laplace's theory requires, the homogeneous state of Spencer. When the differentiation or evolution began there was in the first day light, as we might expect. In the second day came the expanse, that is, the sinking

¹ Mr. G. Romanes declares "that the order in which the flora and fauna are said by the Mosaic account to have appeared upon the earth corresponds with that which the theory of evolution requires and the evidence of geology proves" (Nature, August, 1881). Elsewhere he refers this to "traditional history." But there can be no traditional history of the production of plants and animals.

of the more solid materials and the elevation of the more ethereal. On the third day there was the separation of land and water, and plants were produced. On the fourth day the sun and moon appeared as distinct bodies, in accordance with the theory of Laplace. On the fifth day animals are brought forth—the lower creatures, tannim or swarimers, then fishes and fowls. On the sixth day the higher animals, reptiles and cattle, and as the crown of the whole, man, with qualities higher than all the other creatures, making him like unto God.

There are two accounts of the creation of man. One is in Genesis, chap. i. 26. There is council and decision: "Let us make man in our image." This applies to his soul or higher nature. The other account is in chap. ii. 7: "And the Lord God formed man of the dust of the ground, and breathed into his nostrils the breath of life; and man became a living soul." This is man's organic body. We have a supplement to this, Psalm cxxxix. 15, 16: "My substance was not hid from thee, when I was made in secret, and curiously wrought in the lowest parts of the earth. Thine eyes did see my substance, being yet unperfect; and in thy book all my members were written, which in continuance were fashioned, when as yet there was none of them." This passage used to be quoted by Agassiz. This is my creed as to man's bodily organism. I so far understand what is said. Man is made of the earth. There is a curious preparatory process hinted at; a process and a progression going on I know not how long, and all is the work of God, and written in God's book. I understand this, and yet I do not understand it. Socrates said of the philosophy of Heraclitus that what he understood was so good that he was sure the rest would also be good if he understood it. So I say of this passage. I so far understand it, and get glorious glimpses of a divinely ordained

process, and yet I do not understand it, for it carries me into the secret things which belong unto the Lord our God. I affirm with confidence that there is not, in geological or biological science, any truth even apparently inconsistent with his statement.

I cannot say how man's body was formed. But the Scriptures evidently speak truly when they declare that it was formed out of previously existing materials—out of the dust of the ground. They also declare that God “breathed into his nostrils the breath of life, and he became a living soul.” As to his higher nature, it is said that he was made after the image of God. This must mean in knowledge of truth and in holiness. He cannot know all truth, but he knows of certain propositions, scientific and practical, that they are and must be true. He knows and appreciates the good and distinguishes between good and evil. This he does by the conscience, an essential part of his nature, represented by the tree of knowledge of good and evil. Both these qualities raise him high above the brutes, who have some discernment of things that differ, and a fear of pain and punishment, but have no idea of necessary truth or of the beauty of moral excellence. In all this there is a new power not produced by mechanical or animal agency.

SECTION VIII.

THE NEW POWERS WORKING WITH THE OLD.

WE have seen that in the ages new powers are introduced—powers of life, feeling, and intelligence—whether by natural or supernatural causes we may not be able to determine, because the operation takes place in a region

where it is difficult to say what is creative and what is creature action ; what is done by instruments and what without instruments—like the original creation out of nothing. When these new powers come they act upon, and they act with, the previously existing powers. The seed of the plant falls into the soil already formed, and works in it and with it. The sentient power, when animals appear, acts along with the mechanical energy in the bodily frame. It is the same when higher intelligence is introduced into animalism. The senses still work and supply information, which is received and formed into shape by the intellect. When the moral power begins to act it does not supersede the understanding, which tells us what things are, and upon this representation the conscience proceeds. These superadded powers seem to me to be all very much of the nature of seeds. They continue, and there is reciprocal action between them and their environment. They have life in them and they germinate and grow, influencing their surroundings ; and being swayed by them we have joint results which could not have been produced by either agent, and a development with vastly more varied potencies and of a more marked character, the new powers mixing with the old in the offspring, as they do in the parents. When the plant appears there is an interaction of the organic and inorganic powers, and we have development, in which both are combined, the growth of the plant and in due time its decay and dissolution, but with a seed left behind. When animals with sensation and will come forth we have now a more complex aggregate, still terminating in death, but with a new life in the offspring. The organic as the higher uses the inorganic powers and turns them to its own uses. When mind interposes it acts harmoniously with matter, and the soul and body act and interact, only the mind as the higher

subordinates the other. There is like joint and reciprocal agency as the mental powers rise higher and higher. The memory proceeds on the information given by the senses, and the understanding with its judgments and reasonings, and the conscience with its moral discernment and sentiments, presuppose and proceed upon both the senses and memory. The development now goes on under the new powers, but using all the old powers, and therefore with accumulated momentum. What is gained by any species goes down to the generation following.¹

As one of the issues the operations of nature are apt to go on in epochs, eras, or cycles. The organized causations pass through time like stage-coaches or omnibuses, which take in and give out passengers on to their journey's end. Thus, in animal life we have infancy, childhood, mature age, declining life, old age, and death. We have epochs in history, times in which there is a strong disposition to emigrate and form colonies, as when the Greeks, in the sixth century before Christ, spread themselves over many countries. We have seasons when the cry is for war among large bodies of people, ending perhaps in a demand for peace when the evils of war have been felt, and this continuing till it is needful to defend rights which are being trampled on. We have fashions not only in dress and in modes of social life, but in literature—the Byronic pe-

¹ Prof. Cope has remarked (*American Naturalist*, April, 1880) that the psychical powers modify and strengthen development. "In living things the powers display design, having direct reference to consciousness, to the satisfaction of pleasure and the avoidance of pains. Mind also controls structure: the evolution of mind has a corresponding effect on organism, a view which is confirmed by palæontology. The mind producing struggles of animals has led to machines for grinding, cutting, seizing, digging; for running, swimming, and flying. Man being defective as to these instruments, has been compelled to exercise caution and reflection, and has become restricted to peculiar modes of life."

riod or the Dickens period ; and in art—the Raphaelites and pre-Raphaelites ; in all of which, be it observed, there is a prevailing taste which continues for years. You could often tell at what age a book was written or an edifice built simply by inspecting its style and expression.

While there is an occasional degradation by reason of the want of fitting in the environment to the new life, there is upon the whole a progression. This arises mainly from the continuance of the new and higher powers introduced—say life, or intelligence, or conscience. These abide and go down by heredity, and as they act draw in, influence, and use the surroundings to produce new or higher aggregates. There results an advance upon the whole in the vegetable and animal kingdoms, in the soil, and it may be the climate. The progression is especially seen in man, with his intelligence and moral nature, which in spite of errors and sins, leads on to the employment for ends of many and varied powers, and these of a higher order. These ends are specially secured by the founding of hospitals for the diseased and the weak, and, above all, by the founding of schools and colleges for the cultivation and refining of man's higher nature ; and the improvements go down by heredity from one age to another, when they raise up still nobler products.

SECTION IX.

SPIRITUAL POWERS.

WE have seen that there is an advance in the powers working in our world from the inanimate on to the organic, the sentient, the instinctive, the conscious, the intelligent, and the moral. I have sometimes thought that

in nature itself I can discover anticipations (I would almost call them predictions) of something higher to come. Agassiz was fond of finding prophecies of man's noble form in the frames of the lower animals. He erred, so I think, in not allowing sufficient influence to development. Professor Owen, too, was disposed to believe that the forms of the lower creatures pointed on to man as the archetype. Some of the views of these great thinkers as well as great comparative anatomists, may be somewhat antiquated, or at least reckoned so by our extreme evolutionists. But evolution, properly understood, does not even tend to set aside those ideals which our greatest naturalists have seen, and been elevated as they looked on them. But it may be doubted whether the natural man, the mere animal man, is the true ideal; say the selfish man, the lustful man, the deceitful man, the vindictive man. Every man is in a sense a moral man; he is possessed of a conscience discerning between good and evil, "accusing or else excusing." But our moral nature denounces much that we do, and claims to do so in the name and by the authority of God. Under this God we look for a rectification. This cannot be had in the conscience, which only condemns. Our moral nature points to a law of love, but shows no way of reaching it. In these circumstances we should not be indisposed to look round and inquire whether God, in following out his plan, may not superadd, as he has ever been superadding—some remedial measure, by which his own Idea (using the phrase in the Platonic sense) may be accomplished and realized.

The Scriptures announce clearly and emphatically that there has been an interposition and addition, and this not inconsistent with the original plan, but rather carrying it out. There is a new dispensation going beyond the old and animal ones, beyond even the intellectual and the

moral into the spiritual. God, who created man in his own image, has a means of restoring that image when it was lost. We are privileged to live under the dispensation of the Spirit. There were anticipations of his work under the Old Testament, in his working on individuals to convert and sanctify them. Still such operations were only partial and anticipatory. "For the Holy Ghost was not given, because Jesus was not yet glorified." But Jesus when on earth spake of the Spirit, which they that believe on him should receive. When he had finished his work of atonement for sin, and was taken up into heaven, the disciples waited for the accomplishment of the promise, which was fulfilled when the day of Pentecost was fully come, and the Spirit was poured out from on high. This Power continues to work in the church, and will extend its influence till the Spirit of the Lord is poured on all flesh.

Development now goes on under two potencies, the natural and the spiritual. There are the old powers still working—those of sense and understanding, of reason and of conscience. These constitute the life which God breathed into man when he became a living soul. They compose the higher reason made after the likeness of God, which sin has defaced, but which is deep down in our nature beneath the incrustations covering it from the sight, but which is capable of being restored. Upon these the new and spiritual powers work. Much that takes place is the joint result of the two. The inspiration of Moses, of the prophets and apostles, did not destroy their natural character, it only sanctified and elevated them. The spirits of the prophets were subject unto them. Religion does not eradicate the natural powers, it moulds and directs them to higher ends. The man's faculties and his temperament are not changed by his becoming pious; if he was lively

before he will be lively still, if he was dull and solid he will continue so.

It should be noticed, however, that as the new powers come in there may be opposition offered by the old powers, and a contest ensues. Science tells us that in the animal ages there was "a struggle for existence and the survival of the fittest." There is a like struggle in the human period between the evil and the good. Some of our old theologians held that death was introduced among the lower animals by the sin of Adam. There is no such statement in the Scriptures, and geology shows that death has reigned all along in the animal kingdom. But there is a unity in our world in this respect as in others, that there has been a contest in all ages. In this world the seed of the serpent contends with the seed of the woman, and in the heart "the flesh lusteth against the spirit, and the spirit against the flesh." "The whole creation groaneth and travaileth together until now," but in the hope that the higher will conquer the lower, and that "the creation itself shall be delivered from the bondage of corruption into the glorious liberty of the children of God" (Rom. viii. 19).

The development goes on in eras or epochs like the ages of geology, like the days of Genesis. The patriarchal dispensation grows out of the antediluvian, the Jewish out of the patriarchal, the Christian out of the Jewish. We may discover marked epochs even in the Christian church: the time of the fathers—a time of establishing; the mediæval church—preserving like the winter the seeds deposited; the Reformation—bursting forth like the spring; the denominational churches—discussing doctrines and settling creeds; the missionary churches—carrying the truth to all lands, and about to expand into the millennial church.

Upon the whole, there is progression in the spiritual as

in the natural kingdom. Indeed many interesting correspondences may be traced between the two kingdoms. In both there are old powers and new working together and leading on to higher and higher products. The kingdom of heaven is like unto leaven, which a woman took and hid in three measures of meal, and which ferments there till the whole is leavened. It is a seed becoming a plant; there is first the blade, then the ear, and then the full corn in the ear.

There is a development in the revelation of truth. First there is the shadow and then the substance, there are first types and then the archetype. There are promises and then performances, predictions and then fulfilments. We know little of antediluvian times, but evidently there was then a light like that of the dawn. There were prefigurations in the Levitical institutions made after the pattern shown in the mount. There is higher ethical teaching in the New Testament than in the Old. The discourses of our Lord, who is the light of the world, shed a brighter light than had shone before, Greek or Jewish. There is the fullest revelation of doctrinal truth in the Epistles of Paul, of Peter, and of John.

We may discover this conjunction of powers in the writing of the Scriptures. Moses speaks, and David speaks, and Isaiah speaks, and Paul speaks, and John speaks; and we discover the natural temperament of each, and the influence of the age and circumstances in which they lived. But God too speaks: "Thus saith the Lord." All this is in analogy with God's mode of procedure. The "higher criticism," as it is called, may look at and search and even find fault with the human element, but let it beware of meddling with the Divine element. If it does so it will be seen in the end only to show its weakness and fallibility, by, it may be, casting out, though the critic may not see it,

something fitted to accomplish a good end. "All Scripture is given by inspiration of God, and is profitable for doctrine, for reproof, for correction, for instruction in righteousness, that the man of God may be perfect, thoroughly furnished unto all good works" (2 Tim. iii. 16).

Under this double influence the Christian grows. He "adds to his faith virtue; and to virtue knowledge; and to knowledge temperance; and to temperance patience; and to patience godliness; and to godliness brotherly kindness; and to brotherly kindness charity." Not that he is every instant advancing, but he is, upon the whole, progressing. He may have his periods of declension, but he rises above them. He is like a man ascending a high mountain; as he mounts up he may have to cross valleys deep and dark, but, upon the whole, he is rising higher and higher. The Christian dies like Samson, amid the glories of his strength, and slays in his death the last of his spiritual enemies. The church, too, extends. It is ever spreading into new countries, and it gives evidence that it will at last subdue all lands. Wherever it goes it carries with it innumerable blessings, in the lessening of human suffering, in improved legislation, in the promotion of education—lower and higher—and generally in the elevation of the race in knowledge and character.

Here it is interesting to notice the unity of the developed and developing history of our world. It does not take at first the form of a perfected world, but of a world going on toward perfection. It is not optimist, as Leibnitz painted it, but it is to become optimist. It has evil in it; but it is not pessimist, as Schopenhauer and von Hartmann represent it, going to the other extreme. As it is now going on it is a scene of contests, with defeats and victories through all its past history. It is a scene of contest from the beginning, of warring elements, of creatures suf-

fering who had not sinned "after the similitude of Adam's transgression." There is in it at this moment a contest between the evil and the good, like that between winter and spring, in which the spring, led on by the sun in the heavens, shall certainly prevail.

It is the most blessed of our privileges in this dispensation that every one who believes has access to God. There is a sense, indeed, in which God makes himself known to all his intelligent creatures, and "lighteth every man that cometh into the world." He does so in his ordinary providence, in which he brings events to pass according to causes which he has instituted, and in which he acts quite as certainly as if he produced everything without subordinate agency. But earnest minds have never been satisfied with such distant views of God as are given by causation and consequent evolution. They aspire after and long for immediate intercourse with God. They pray in the belief that there is one to hear them, and they expect an answer. They will not allow themselves or others to think that God has so shut himself out from his own world that he cannot act in it and on it. They deny that our petitions are so bound to the earth by gravity that they cannot mount upward and reach the ear and the heart of our Heavenly Father who is felt as pitying them. They believe that their spirits can hold communion with God, who is a spirit, quite as certainly as our earth can act on the sun, and the sun on the earth. They have faith that there are wider and closer unions than the attraction of matter to matter. They are sure that all holy intelligences throughout the universe are in union with the holy God. Sure as we speak to God in faith God hears us. He speaks if we will but hear. "Truly our fellowship is with the Father, and with his Son Jesus Christ."

From this double power, natural and spiritual, arises the

difference in Christian experience and character. People have different natural inclinations, and are beset by different sins and temptations, and he suits his manifestation to their diversities. No Christian should insist that the work of God should be the same in the heart of every other as in his own. Nor should any one doubt of the reality of a spiritual work in himself because his experience is not the same as that of some others of whom he has read, or who may have opened up their feelings to him. Just as there is a diversity in the works of nature, in the color and form of plants and animals peopling the earth and ocean; just as there is a variety in the shape and countenance of the bodily frames of men; just as one star differeth from another, so Christians, while after one model, are made to take different types and hues of beauty on earth, and shall thus with their individualities be transplanted into heaven to adorn the paradise of God, and shine as stars in the firmament in heaven. In heaven the foundations of the wall of the city are garnished with all manner of precious stones, and the tree of life in the midst of the garden bears "twelve manner of fruits," so the saints will there have each his own character; and the song which ascends will be a concert of diverse voices, each melodious, but each in its diversity joining with the others to make the harmony. Each in his own way will join in singing "the song of Moses and the Lamb."

SECTION X.

OVERSIGHTS IN SPENCER'S EVOLUTION.

It is of no use denying in our day the doctrine of evolution in the name of religion, or any other good cause. An age or two ago many religious people were afraid of geology. It can now be shown that it rather favors religion by its furnishing proofs of design, and by the wonderful parallelism between Genesis and geology. The time is at hand when all intelligent people, religious and irreligious, will perceive that there is nothing impious in development considered in itself; though it may be carried to excess and turned to atheistic purposes. The business of inquirers now is to explain its nature. This is what I have endeavored to do, to the best of my ability, in this little work. In doing this I have given an account different from that of Herbert Spencer. My work is a small one compared with his elaborate volumes. I do not purpose at the close of it to review his theory. In another number of this Series I propose examining his philosophy as culminated in his Ethics. I am here merely to show that I have set forth some truths not noticed by that powerful speculator, who is as remarkable for what he has overlooked as for what he has looked at. I think I have helped somewhat to clear up the subject by representing evolution as an organized causation. This requires us always to look for an adequate cause of the new product attributed to evolution. Mr. Spencer, and his follower Mr. Fiske, refer the whole to the Persistence of Force, as if there were only one power, and this apparently only mechanical or biological. But

there are other powers, or at least manifestations of power, of which we have as distinct evidence as we have of these. In particular there is a mental power, of which we are conscious, but at the peculiarities of which he has never looked, and which cannot be produced by any persistence of his forces.

It was charged against Locke by Liebnitz, and repeated by Cousin, that in constructing his theory—that all our ideas are derived from sensation and reflection—he did not begin with a careful introspection of the ideas themselves, and that, in fact, he overlooked the peculiarities of some of our most important ideas, such as infinity and moral good. A like charge may be brought against Spencer. As might be expected of one trained as an engineer, he is well acquainted with mechanical power, and has acquired a large knowledge of biology, some of his theories in which, however, as, for instance, his development of nervous forces, are not acknowledged by our highest authorities. But he seems to me to have never looked patiently, by the inner sense, at purely mental acts, such as consciousness, cognition, moral discernment, and will. “I believe that the experiences of utility, organized and consolidated through all past generations of the human race, have been producing corresponding nervous modifications, which, by continued transmission and accumulation, have become in us certain faculties of moral intuition.” Our moral intuitions are thus nervous modifications become hereditary.

He speaks often, as even the materialist does, of psychical acts. He thinks he has accounted for them by evolution. He has done so, simply overlooking their distinctive qualities as revealed by consciousness. He tries to evolve the conscious from the unconscious, thought from that which has no thought, and the moral from that which has no morality. He has thus in the effect what is not in the

cause. If we scrutinize his theory carefully, we shall find that what he accounts for is not properly psychical or mental operation, is not the consciousness of self, is not the feeling, the emotion, the reasoning, the resolution, the sentiment disclosed to the internal sense. The mind being merely an aggregate of nerves (he seems incapable of conceiving it as anything else) he can so far account for it by evolution. But when we look on mind as perceiving, judging, discerning between good and evil, we discover that he has not explained its rise by his evolution; he is not able to derive the rational from the irrational, or the good from that which has no moral perception. The fact is, his development is merely an evolution by the physical forces, not of the mental acts, but merely of their surroundings or the environment. These forces do have a powerful influence on the internal or psychical powers, not in producing them, but in directing them in certain channels. He thus believes himself, and makes it appear to others, that he is evolving consciousness and conscience when he is merely developing their accompaniments, and has never looked at anything else. Thus with all his zeal for development, he has never noticed seriously the grand results produced when psychical, and especially moral power, is joined with physical causation.

I know full well that exclusive physicists will look down with contempt upon my insisting on giving the higher intellectual and moral powers a place in evolution. But I hold these to be realities quite as much as bodies, with their energies and the motion they produce. It is not encouraging to the highest thought to find how few of those who have produced such a revolution in biology of late years have ever been trained in colleges or otherwise to consider purely mental phenomena. I do not regard their disposition to set aside these as a proof of the comprehensiveness of their

minds, but rather of their narrowness. For myself I have carefully tried never to allow my devotion to mental science to tempt me to neglect physical and physiological facts. I claim that never in my teaching or in my writings have I set myself against any discovery in natural science which has turned out to be true. Our naturalists would be elevated if, in looking at material agencies, they did not overlook mental, moral, and spiritual powers. The full-orbed truth is discerned only by those who go round it and look at all its sides. Thus only can the mind be open to all knowledge, and become expanded in any measure corresponding to the width of the universe disclosed to us.

CERTITUDE, PROVIDENCE, AND PRAYER

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CERTITUDE. PROVIDENCE AND PRAYER.

INTRODUCTION.

I AM accustomed to characterize the age as one of unsettled opinion ; certainly not one of strong faith, nor yet of avowed scepticism, but of restless creed. There is a wide-spread impression that the advance of thought, and especially of natural science, has undermined old and fundamental truths both in philosophy and religion. I am endeavoring to show in this series of papers that it is not so. Some of these truths may have to be put in a new and more correct form ; the defence of them has to proceed in a wiser way ; but the radical principle remains as deeply and firmly established as ever.

The doubts and difficulties issue from four quarters of the heavens, or rather of the clouds.

I. From philosophy or metaphysics. There is a growing idea that all truth is drawn from experience, that innate ideas are dead and committed to the grave, from which it would be offensive to raise them, and that their heirs and successors, *à priori* principles, are waxing old and are ready to perish. If this be so, there is left to us no universal or even positive truth, certainly no eternal or absolute truth, as the experience of the individual and of the race must be limited ; it can give us only knowledge

produced by circumstances, and which may change with circumstances and vary with the position. The issue of the uncertainty is agnosticism logically, and scepticism chronologically—that is, when the causes have time to work. I have met and faced this error in No. I. of this series, and mean to give point and application to my reply in this number. I do so by a more sober account than is usually given of first, or *à priori* truths. I have to defend my position by examining historically, in future numbers, the opinions of such influential thinkers as Locke, Berkeley, Hume, Kant, and Herbert Spencer, and endeavoring to find out what truth they held, and what the errors into which they fell.

II. From natural science. It is alleged that all nature, physical and psychical, can be accounted for by cause and law and development, which are shown to prevail universally. The mistakes thus arising I have endeavored to expose in No. II. of this series, where I have sought to clear up the subject of cause; and in No. III., where I have shown that development is an organized causation having a wide field, but at the same time decided limits, and being simply a method by which God works.

III. From ethics. There is an attempt made to develop conscience and morality from experience and from heredity. It is allowed that this makes good and evil depend on circumstances, and makes it possible that the good in one world may be evil in another, and the evil in one constitution of external things be good in a different state of things. It is to be met by showing that there is a morality which does not shift, but is in the very nature of things. This subject will be taken up in this number, and will be more fully discussed in the criticism of Herbert Spencer's system as culminated in his "Ethics."

IV. From cosmogony. As the result of all these dis-

cussions there are doubts as to what is the nature of our world. Is it optimist or pessimist? the best possible or the worst possible? or neither? This brings before us Providence and Prayer, and it will be shown that this world is not the best, for it has evil, nor the worst, for it has plenteous good; it is a world not perfect, but going on toward perfection. This topic is started in this number, and will come up once and again for discussion and settlement.

SECTION I.

REALISM AND CERTAINTY.

Common people, and even thinking people, are not much inclined to speculate, or so much as to inquire, as to the actuality and certainty which they hold by. They assume certain obvious realities, and are sure that they know them, and they do not wish to be disturbed by thinking on these points, say as to their own existence or that of their mother, and are rather irritated when doubts are raised or they are subjected to questionings. But when puzzling thoughts arise, and objections are urged, and they are compelled to reflect and to speculate, they have then to face the question, is there a reality and can we find it?

The search of the Eleatics, the earliest Greek metaphysicians, was for reality— $\tauὸ ὄν$ and $\tauὸ εἶναι$.¹ They saw that the popular apprehensions were often erroneous, and they

¹ The Greek phrase $\tauὸ ὄν$ is often translated absolute in the German histories of philosophy. But absolute is rather a modern idea, stirred up by the theological belief as to infinity, and metaphysical discussions as to conditions. The Greek inquiry was after realities as distinguished from appearances.

labored to correct them by finding what things exactly are, and they came down to what is fixed and unchangeable. This was also the main aim of Plato, who sought by a subtle dialectic, and by bringing in an Idea, to reconcile the opposing systems of his day, and the fixedness of things with their changing appearances. The search, openly or correctly, has a deep place in the whole Greek philosophy, even in that of Aristotle, who did more than any other to bring down philosophy to facts, while its own region is above facts. The fault of the subtle speculators was that they dived down to the bottom of the well to find the pure water which had risen to the surface, and in doing so they stirred up mud which troubled the whole.

Modern metaphysicians have been disposed to make our conviction as to reality to be the result of a complex process, which they had to unfold. Descartes made the knowledge of self take the form, if not the reality, of reasoning: *Cogito, ergo sum*. Descartes and Locke both represent the mind as knowing and looking at an idea in the mind, or out of the mind, instead of matter itself. Berkeley, adopting this principle, showed that we have no proof of the existence of matter. Hume drove the philosophy of his day to its logical consequences, and beginning only with "impressions" and "ideas," without a thing to impress the mind, or a mind to impress, landed thinking in universal scepticism. Even Reid did not speak very decidedly about self-consciousness as perceiving self directly, and he talks of sensations "suggesting" the perception of an external world. In arguing with the sceptic Kant was unwilling to postulate too much, and he started with presentations unknown, or with phenomena in the sense of appearances, and not with things; and he could reach reality only by a process which his greatest admirers regard as unsatisfactory, and which, it is

now argued, issues logically in agnosticism. Hegel, to his credit, tried to bring back thought to reality, but it is by a dialectic process, which, as it did not begin with reality, never could reach it by legitimate logical inference, or rise higher than the subjective process.

It is time now to return to the natural method, and to avow it and justify it. In reflective as in spontaneous thought, in metaphysical philosophy as in natural thinking and conviction, we should start with existing things. Let us commence with our own existence, that is, with self as existing, always along with something affecting it. There is no intellectual or moral impulse, no felt want or desideratum of any kind requiring us to prove our own existence. We need not try to prove it. If we try, it will only be to find that we cannot; for there is nothing simpler or more evident from which to infer it. We should at the same time begin with the existence of external and material objects as affecting us. It is conceivable indeed that this step is a derivative one. It is urged by some that, knowing self, we may by a process reach a something out of self, and extended, that is, occupying space. But this process, if there be such, must be instinctive. We cannot by reasoning, or any legitimate discursive step, leap over the chasm between the self and the not self, any more than we can leap over our own shadow. We apprehend body as extended, but there is nothing in an unextended self to entitle us thence to infer an external and extended object. Just as little can this be done by a gathered experience, for when externality and extension are not in any one of the experiences we cannot find them in an accumulation of them. Altogether it is the most satisfactory hypothesis to assume the existence both of a self and an extended not self. No, it is not an hypothesis, it is a fact that we know both.

But it is objected, Do you hold, and justify yourself in holding, what cannot be proven? To this I reply that there may be two kinds of evidence, one immediate and the other mediate. When I open my eyes on a letter I know that there is a colored surface before me; I do not need evidence through anything else, for I have it in the thing itself; it is self-evident. But when I argue that this is a letter from a friend, I need mediate evidence, say in the signature attached. The mind does not insist on having indirect light, we may have direct. It is sure that the direct evidence, when it can be had, is the more satisfactory. It demands immediate proof only when it has not the other. In all cases the mediate proof proceeds in the end on an immediate proof on which it depends. There is a primitive knowledge anterior to and above mediate probation. It is so far a weakness in us that we are not able to know a thing directly, and to call in intermediate steps. We may believe that there are angelic beings who perceive things and truths at once, and without a process. We are not required to believe without evidence; but the evidence may be in the thing itself, that is, be self-evident.

But are we at liberty to appeal to assumed truths when we find it convenient, and thus render all probation and investigation unnecessary? Those who have used first principles have commonly enunciated tests—often, I admit, loosely stated. The test of necessity used by Leibnitz and Kant is the one most commonly appealed to in the present day—and it is decisive. It is the only criterion available to those who do not allow that we can perceive objects directly; but it is felt to be somewhat harsh to insist on us believing a proposition simply because we must do so. Those of us who hold that we can perceive objects directly have a prior and more satisfactory test—that of Self-Evi-

dence; we know a thing, and are thus sure that it exists. As knowing it we cannot be made to think otherwise, and thus the secondary test, Necessity. These are confirmed by the third test, that of Catholicity, when we find the truth believed by all men.

But, it is asked, If first truths be so certain, how is it that there is so much uncertainty in the metaphysics which treat of them? In order to meet this question we have to draw two distinctions, which have been very much overlooked in speculative philosophy.

First, we have to distinguish between first truths, properly so called, and other things—impressions, inferences, experiences—mixed with them. We can stand up confidently for the certainty of all original perceptions, but not for the rash reasonings upon them, or the feelings they gather around them. Our constitution, and the God who gave us our constitution, are not responsible for all the pretentious metaphysical principles which multitudes indulge in.

But there is a more important distinction. These first truths are all in the first instance singular. The child, the savage has certainly not before him general metaphysical principles, such as that it is impossible for the same thing to be and not to be at the same time. He simply knows that if a thing be here now, it cannot be elsewhere. He has not consciously before him the rule that the shortest distance between two points is a straight line; but he actually takes the straight line when he has to walk from one place to another. He is not in the way of conceiving or enunciating the law that every effect has a cause; but on noticing a new thing, or a change on an old thing, he looks for a cause. It is only the mature man, only, in fact, the metaphysician, who is at pains to generalize or formulize the individual perceptions into a general law or axiom.

In doing this he may commit a mistake. He may lay it down as an indisputable principle, that "it is impossible for the same thing to be and not to be," to find it contradicted by the fact that a tree or a man exists now, and is gone in a short time after ; and so he has to add the clause, "at the same time." Some one lays down the maxim that everything has a cause, and he is immediately asked has God a cause, when he has to amend his statement, and make it everything that begins to be has a cause. The forming of the general rule out of the individual and often complex exercise of our primitive perceptions is one of the most difficult tasks in which the human intellect can be engaged, requiring the most careful observation and the sharpest subtlety to disentangle the primitive truths from its accretions. Confused statements, premature generalizations, and hasty inferences abound in speculative philosophy more than in any other branch of inquiry. Metaphysics is commonly believed to be the most dubious and perplexed of all departments of science. This is not because of any uncertainty in the principles in the mind, but because of the difficulty in apprehending and enunciating them. The remedy is to be found in insisting that those who use for any purpose a first truth, which they assume without proving, should put that truth (as is done in mathematics) in proper form and show that it is in the mind.

Upon the primitive cognitions are reared other first truths. In Primitive Cognitions the object is present. But we are quite as sure of the existence of other things not present, as, for example, our conviction of our existence in time past, and generally our convictions as to time, as that time is continuous, and that all events are in time. These constitute our Primitive Beliefs. Again, in comparing things known to us we discover at once that they agree or do not agree. These are Primitive Judgments. It is

thus we decide that we are the same persons to-day that we were yesterday ; that the whole is equal to the sum of its parts ; that whatever is true of a class is true of each of the members of a class ; that two parallel lines cannot meet ; that time flows on ; that equals added to equals are equals ; that a property implies a substance, and an effect a cause.

So much for first truths. But by far the greater number of the truths which we are required to believe from day to day and from hour to hour are derivative. If we follow these sufficiently far down, we find they have a foundation firm and strong in first truths. But the derivative truths constitute a superstructure raised above them, and we have to see that all the parts be secure. We have now, I believe, convenient tests of these. There is truth gained by reasoning of which we have tests in the syllogism. There are general laws, reached by gathering facts, and we have now canons determining their validity. Some of them are certain, in fact, as certain as primitive truths, though not determined by the same kind of evidence. Others are only probable, but it may be so probable as to demand our assent, as that the sun will rise to-morrow ; others may be doubtful, as that the planets are inhabited. The tests we have given in Series No. I. should determine the degree of probability. I have shown that among these primitive perceptions we have that of power and cause and effect, the precise nature of the energy being determined by experience (see No. II.). I have shown that causation leads to development, and that the development in the world is an organized causation accomplishing ends (see No. III.).

But has not evolution changed all this ?

SECTION II.

EVOLUTION AND CERTITUDE.

It is certain that intelligence grows. The way in which it does is an instructive illustration of the nature of development. It is within ourselves, and we can see its workings in this department more readily than in any other.

It is always to be presupposed that there is an intelligent mind with capacities; without this presupposition we cannot advance a step. It is of the nature of these capacities to work. As they do so they are acquiring, accumulating, and combining knowledge. The child gets information by direct observation, and from parents, nurses, and teachers. As the boy advances in life he is ever noticing new facts, treasuring them up in the memory; is ever reflecting on them, arranging them, and subjecting them to abstraction, generalization, and reasoning. The brain grows by the exercise of the mind; the cerebral hemispheres of the mature man are larger than those of the infant; and those of civilized men, as a whole, weigh more than those of savages. It may be allowed, I think, that the mental capacities grow with the growth of the brain, that they both grow by mutual action, and that the mind itself is strengthened and enlarged by exercise, and by increase of knowledge.

So much for the growth of the individual. Now it will surely be allowed that this growth, or development if you choose to call it, does not destroy or set aside the primary intelligence; on the contrary, it enlarges it. The child

acquires knowledge, and is ever adding to it. The later knowledge surely does not disannul the early. The growth, in fact, consists mainly in an increase of capacity to attain higher knowledge. True, the boy may be led to entertain narrow, or even erroneous opinions, but the mature man may correct them.

Herbert Spencer has been showing that not only is there a growth of the individual, but of the animal race. The attainments of one age go down by heredity to the succeeding one. The power of hunting acquired by the dog goes down to its descendants. Mr. Spencer holds that intelligence does thus go down from father or mother to son or daughter. It may be so. The brain structure determined by the habits of a parent may, by inheritance, determine a certain disposition in the children. But all this does not destroy, or even lessen, the capacity for acquiring knowledge. I can conceive a heredity that would bear down and crush all independence of thought, and place all mankind in the position of lunatics. But the actual heredity makes, or rather finds us, sane men, and increases our power of judging for ourselves.

The capacities which descend are perceptions of things. Heredity does not destroy human intelligence or render it untrustworthy. Every man has a power of knowing realities, and of distinguishing between truth and error. No matter how this power may have come, it may have been handed down by father or mother, or from grandfather and grandmother, or from a long line of ancestors, but it is the man's own; he may trust in it, and he is responsible for the use of it. In whatever way the intelligence may have been produced he can trust in it when it declares, upon the evidence furnished, that such an object, say a friend, exists; that such an event, say his marriage, has happened; and that mathematical truths, such as that

all the angles of a triangle are together equal to two right angles, are certain. I am sure that there was such a man as Julius Cæsar; that there is such a city as Rome, and that the sun attracts the moon; and this, whether I did, or did not get the capacity to do so from my ancestors. A traveller sets out on a journey with a capacity to observe, and as he proceeds he is acquiring knowledge and increasing his acquisitions. The new ones do not set aside the old, they only add to them; and the addition may often clear up difficulties and correct wrong impressions, produced without evidence, as to the paths and boundaries of plain, bay, and forest. So it is with our capacities, hereditary or personal, they merely add to our powers of vision and enable us to discover further truth.

SECTION III.

EVOLUTION AND MORALITY.

Our moral power grows, just as intelligence does. Our ethical perceptions depend so far on our intelligence, as we must know what the deeds are, and what the motives of the actors, before we pronounce a sentence upon them, and this we have to do by our cognitive powers. Our moral powers thus grow with our powers of understanding. Not only so, but it may be allowed that the conscience grows by being properly exercised; it gathers by accretion, and becomes quicker in discernment. It is strengthened by the resistance it offers to evil, waxes valiant in the fight, and is made more confident and courageous by the victories it gains. As it looks to God and his law—the law of love—its vision is purified, its views are enlarged, and the sphere of duty is widened.

According to a prevalent philosophy in the present day, the conscience is a growth—a growth produced by circumstances. In other worlds our evil may be good and our good evil, or there may be no good and no evil. The idea of good thus becomes the product of position and events. This principle is implied covertly in utilitarianism. An action is good only so far as it produces pleasure, evil only so far as it leads to pain, and this depends on the surroundings. But conscience is not the product of circumstances any more than the intelligence is. Both are so far swayed by circumstances, but both have an independent power quite as much as the circumstances which sway them. I know that the opposite angles made by the intersection of two straight lines are equal to one another; and I know that charity, and sacrifice in a good cause, and speaking the truth are good, and that lying and hypocrisy are evil and only evil.

The idea of virtue being a product lies deepest down in the biological utilitarianism of Herbert Spencer. Virtue is the quality that produces pleasure, determined by a long succession of ages, and consolidated by heredity. Now it is true that our moral power grows, but it is growth from a germ. The faculty admits of improvement, but it is because it exists as a faculty. Love and justice are discerned as good in themselves—and not because of good consequences which follow from them because they are good—just as gold is seen to glitter. Ingratitude for favors and evil-speaking are seen to be evil in themselves, not because they lead to painful issues, which in fact follow because the deeds are evil, just as night is seen to be dark. Our conscience is of the nature of a perceptive power, looking at voluntary acts and perceiving them to be good or evil. We are as sure that mercy is a virtue as that the moon shines up there in the sky. We are as sure that

murder is an evil as that poison kills. It matters not whether my perceptions have descended from my father or mother ; they are now mine, quite as much so as my ocular vision, which, in like manner, has come to me by inheritance. It thus appears that development cannot interfere with the certitude either of truth or moral goodness.¹

SECTION IV.

PROVIDENCE.

I am afraid that there is a growing number of people, who, while they believe in the existence and in the goodness of God, do not see him as they ought in the arrangements which he has made for the good of his creatures. This is one of the ways in which religion is losing its hold on the minds of thinking young men, who have been trained by science to discover causation and law in every part of nature. I fear there is not the same belief in providence as our forefathers held and cherished. In the theosophies of the East a divine power was seen and acknowledged in all the activity perceived in the universe ; I have to add, however, without God being separated from his works. In Greece and Rome the people saw their different gods in the varied departments of nature : Jupiter in the thunder, Neptune in the waves, and Ceres in the crops. Our Christian forefathers delighted to discover God's hand in every event, which they believed to have a meaning which they diligently sought to ascertain. This was often done presumptuously and superstitiously. People argued a purpose and an end which the God who ordered the

¹This subject will be more fully discussed in the paper on Herbert Spencer.

occurrences never saw, and interpreted events with a favoritism toward themselves and as judgments upon others. There is now a reaction against this whole style of sentiment, and people go to the opposite extreme, and regard it as vain to seek for a meaning in any of the operations of nature. There is a temptation here, fostered by the scientific spirit of the age, which believes in law and believes in development. Those who yield to this prevalent feeling lose many valuable lessons which God is teaching, if people would but observe his ways. I believe as firmly as any man can in the universality of law, and in the prevalence of development; but I regard them as processes by which God fulfils his purposes.

There is a GENERAL PROVIDENCE. God has so constituted his creatures that they have wants to be supplied, and he has made provision for supplying these. He sheds rain and sunshine upon the evil and the good. This is not effected by the mere powers of matter. These, if undirected, might work only confusion and mischief. Gravitation will pull down an imperfectly supported building upon our heads, and electricity, in the form of lightning, may destroy us on the instant. The potencies of nature, its mechanical powers, its chemical attractions, and its vital agencies are so arranged as to produce beneficent ends. But they have been so arranged, by him who formed them and acts in them; that they produce general laws which his intelligent creatures may observe, and to which they may accommodate themselves. It is seen very clearly in the revolving seasons of the year and in the periods in the life of animated beings—in their germination, their growth, their decay, and dissolution. Man can come to know these laws, and is expected to suit himself to them and take advantage of them. Nature does not provide for all our necessities without our requiring to exert ourselves;

this would tend only to produce idleness and self-consequence, with all their attendant evils. In order to get what he needs, man is obliged to be active and industrious, and being so he secures blessings, always by the providence which God has arranged so skilfully and beneficently. The great body of mankind, all indeed except atheists, are disposed to believe this, and are encouraged and comforted as they discover that the good and wise God has planned it all.

So much all people, with a few exceptions, will be inclined to see and acknowledge, and as they do so a vague feeling of reverence and love will rise up in their bosoms. But there is a deeper meaning than this in the system of nature.

There is a SPECIAL PROVIDENCE. The chief of a government, the general of an army, the head of a great mercantile house have to satisfy themselves with giving general orders which may be for the good of their dependents, but they cannot anticipate every incident or provide for the case of every individual. This is because of the limited nature of their capacities and of their knowledge. But no such weakness is laid on the Omnipresent One, who is in every place; on the Omniscient One, who knows all things; and the Omnipotent, with whom nothing is impossible. Every thing that falls out is appointed by him, nothing can occur unforeseen by him, and no opposing power can thwart his will. Every man's lot, and every incident in it, large or minute, prosperous or adverse, successful or disappointing, is ordained and secured. This is the doctrine of the greatest of all teachers, and is the only one consistent with an enlarged conception of God. "A sparrow cannot fall to the ground without him." "The very hairs of our head are all numbered." This was also taught by the wisest man of the most culti-

vated people of the ancient world : Socrates delighted to see a purpose in every organ of our bodily frame, and divine power watching over him and directing him in every turn of his life. The Christian knows that his destiny throughout is ordered by One who sees the end from the beginning, and who cannot err or fall short in wisdom or goodness, and who now sends this trial to warn, arrest, and chastise, and anon bestows this gift for encouragement and comfort.

We can see a way in which God can accomplish special ends, and this in entire accordance with the prevalence of law. In order to understand this it is necessary to refer to the distinction stated briefly by Paley in the opening of his *Natural Theology*, expounded by Chalmers and defended by Mr. J. S. Mill : it is the distinction between the laws of matter and the collocations of matter ; or, as I express it, between the powers and properties, on the one hand, and the dispositions and arrangements of matter on the other. Arrangements are evidently needed to make the properties of matter work orderly and beneficently. This is quite as certain as that there are laws or causes in nature. In the construction of a building a great many materials are brought together, and disposed according to a plan, and to enable the edifice to fulfil its end. So it is in that grand temple of nature which God has built. Its separate objects, with their properties, are so disposed that we have first a general order—a house with compartments fitted for all, constituting that general providence of which I have been speaking, such as the blessings secured by the seasons. But farther, these dispositions are so made that there is a place for each man, a provision for him, a guardianship over him, and a course for him to pursue.

By this pre-arrangement God makes blind, mechanical, chemical, and vital laws fulfil his benevolent and righteous

purposes. By this collocation rings inflexible in themselves are made flexible, and the fabric fits into the frame, covers it as a disc, and protects it as a coat of mail. The two, the general and the special providence, do not oppose or contradict each ; they conspire and co-operate. There is no inconsistency, even in appearance, between God working everywhere in nature and the prevalence of physical causes and laws. God accomplishes individual ends by causes, and according to laws which he has appointed.

A stone will fall to the ground if unsupported, and this by a law which cannot be changed ; but when it is falling from a high elevation, and might kill the person beneath it, another individual who is standing by turns it aside, and no injury is done. We say, and I think very properly, that all this is done by the providence of God, who gave to the stone its properties and place, and to the bystander his generous impulse.

But what are we to make of those dispensations which bring suffering and sorrow ? Are we to regard them simply as casualties or fatalities ? Or are we not rather to look upon them as judgments and as punishments ? In seeking to answer such questions there is need of much thought and much charity. We have warnings on this subject from very high authority. One of the lessons taught by the grand dialogues in the Book of Job is that we are not to regard suffering as proving the existence of special sin. The Great Teacher warns us, " Suppose ye that these Galileans were sinners above all the Galileans because they suffered such things ? I tell you nay ; but except ye repent ye shall all likewise perish. Or those eighteen upon whom the tower in Siloam fell, and slew them, think ye that they were sinners above all men that dwelt at Jerusalem ? I tell you nay ; but except ye repent ye shall all likewise perish."

There is a meaning in the afflictions which God sends, and we should seek to find what it is. There are cases in which we should discover in them the judgments of heaven.

1. We may discover God's judgments when the evil comes as the direct consequence of sin. There is no want of charity or kindness involved when we think and declare that this weakness or disease has sprung from vice, say from intemperance or loose living. When we can prove that the sins have been committed, we may and ought to observe that cunning and deceit deprive those who are guilty of them of the confidence of their fellow-men. We cannot and should not help experiencing a feeling of satisfaction when the wicked are caught in the trap they have laid for others. In all such cases indignation is a virtue, and the expression of it tends to purify the moral atmosphere in the community. There is a simpering charity which is a positive sin when it leads us to excuse or palliate known evil. God is speaking to us in all these judgments, and we should listen and stand in awe.

This is all we are entitled to do when the judgment is seen descending on others. But when a trying dispensation, say disease or disappointment, visits ourselves we may learn further and more special lessons. In such cases we may and always should inquire reverently what is its meaning to us. As we do so, we may not be able to discover at the moment all the ends which it is intended to serve; but still we may find out some of them. In all cases we should feel that we may profit by what God sends, and this whether we are able to decide for certain that God thus intended it; the fact that God has sent it is a presumption that he has a meaning in it. From our propinquity and close access to ourselves we may find that the event has a special direction toward us which others are

not able or entitled to notice. Even in regard to others we may quietly observe, exercising charity all the while, that a cross is sent at a particular time in order to correct and restrain a weakness or an evil in the character. Thus a friend of mine much engrossed with public benevolent work, with very little time left for his family, was laid aside from his labors by a malady which compelled him to live with his children, who were greatly benefited thereby, and I saw a providence in it. We are to be cautious in interpreting such occurrences in regard to others; but we may often perceive the end to be accomplished in regard to ourselves. We are not entitled, because events are all favoring us, to allow the impression to spring up in our minds, that therefore we are the favorites of heaven. Because a course followed by us is prospering, we are not therefore to conclude that it has the approval of God. It is not God's providence, as has often been remarked, but his law which is to be the guide of life. We must see beforehand that every step we take has the approval of God; but having done so, we may notice as we advance that God is encouraging us by the aid he gives, by removing obstacles out of the way, and opening a path through difficulties and perplexities. In particular we may observe that a check is often laid upon us to keep us from entering on a path where we might be exposed to temptations which we are not able to resist. The good man, as he walks on, will see that his steps are ordered by the Lord. The aged man, in looking back on his past life may discover that God has led him in a wonderful way, such, it may be, as he did not wish, but which he now sees to be full of wisdom, turning him aside when he was entering upon a dangerous path, and opening a road for his relief when he was shut in; restraining him when he was advancing too rapidly, and stimulating him when he was

becoming slothful and discouraged. What he knows not now he will know hereafter, if not sooner, in the light of heaven.

I maintain that there is nothing in the most advanced discoveries of science to deprive any one of these consolations. The language of Bacon cannot be too frequently quoted: "It is true that a little philosophy inclineth man's mind to atheism, but depth in philosophy bringeth men's mind back to religion. For while the man looketh upon second causes scattered, it may sometimes rest in them and go no further; but when it beholdeth the chain of their confederate, and linked together, it must needs fly to Providence and Deity."

SECTION V.

PRAYER.

Here we presuppose that prayer is a duty, a duty to God and a duty to ourselves. We are constantly receiving gifts, and it is an obligation of common morality that we should thank the giver. We have his wondrous works spread out before us, and unless we sinfully restrain them our hearts will prompt to praise. We daily commit sins, and we should daily confess them. We are always dependent on him, and it is meet that we should feel and acknowledge it. That man fails in one of the very highest ends of his existence who does not rise to communion with the great and good God. Such considerations, founded on the relation in which we stand toward our creator, preserver, and governor should lead us to pray, and we should allow no objections or cavils to tempt us to neglect or give up prayer, which is as clear a duty as any other binding upon us. Prayer is, in fact, a natural im-

pulse, prompted by internal conscience and the feeling of gratitude, and called forth by the circumstances in which we are placed ; and it is wrong in us, as some do, to resist it or seek to repress and crush it.

But does God hear and answer prayer? That he hears it we may argue from his omniscience. That he listens lovingly we may infer from his goodness and grace. But does he answer in the sense of granting our requests. Upon a Scotch minister, Dr. Leechman, publishing a sermon on the value of prayer as rendering the wishes it expresses more ardent and passionate, Hume remarked, " We can make use of no expression, or even thought, in prayers and entreaties which does not imply that these prayers have an influence." But there may be difficulties started as to the possibility of prayer being answered. I am not to enter into personal controversy, but the line of thought pursued in this part of my paper has reference throughout to an eminent physician in London, Sir John Richardson, who a few years ago proposed a Prayer Test, and to the objections taken by Professor Galton in his recently published "Inquiries into the Human Faculties."

The principal objection, the fundamental one, is that the laws of nature are fixed and unchangeable. The sun will rise at the appointed hour to-morrow, even though there be persons praying for certain ends of their own that he should not appear, or appear at a different hour. The tides will flow and ebb in order, even though those setting out on a voyage might wish, for their convenience and comfort, that they should not do so.

I have answered this objection in treating of Providence, of which the answer to prayer is an exemplification. God answers prayer by providence. God has arranged matter and its forces so that good purposes, small (as we reckon them) as well as great are accomplished ; virtue is

encouraged, vice is restrained, and among other good ends an answer is provided to the prayer of the most obscure believer, who is thus made to feel that he has not been overlooked in the plan of the universe. From the very beginning the prayer and its answer have been bound together in the counsels of heaven and the decrees of God. To accomplish his ends and to answer prayer it is not necessary that God should change his laws, for his unchanging laws may bring what is prayed for.

At this place I may call attention to two important principles fitted to stay and satisfy the mind. First, we have to take with us the doctrine of predestination, it being always so understood as to be compatible in itself, which it is, with the essential freedom of the will and the accountability of man. Indeed the modern doctrine of the uniformity of nature is substantially the same as that of foreordination, only seen under a somewhat different aspect—the one from below and the other from above, the one secular and the other spiritual, the latter being vastly the more comforting, as it brings in the will of a good God. In the ordination of nature, in the preordination of God, the prayer and its answer are so connected that the one follows the other, and without the one there would not be the other. This is one of the providential laws perfectly consistent with physical laws, and generally executed by physical laws.

We must take along with us another pleasant and consolatory truth, God acts in all the present actings of nature as really and truly as he acted in the beginning when he set nature agoing. God is as much present in his works as he ever was, and so when prayer is answered by natural agents it is answered by God quite as much as if answered by a visible hand or an audible voice, which are human rather than divine modes of communication

and when used by God are, after all, mere physical means.

In order to explain all this, some have argued that time has no place in the apprehension of God. Some of the mediæval mystics spoke of God as an Eternal Now, and of past and the future being before him as much as the present. There is, it appears to me, a profound truth meant to be expressed in this statement. But it must not be so expressed as to make it contradict our intuitive knowledge of things. An eternal now, an eternal present, sounds very much like a contradiction. We perceive time to be a reality, that is, a thing existing. If it be so it must be known as a reality by God. But time may have quite a different relation to God to what it has to us. God is to be looked to and thought of as immediately present in his works when he made them, and now when they are acting. When man has constructed his machine he may leave it to itself to work, or rather he leaves it to God, who works in the natural agents. But God does not; and cannot from his nature, withdraw from the world and from acting in it when he has finished it. God is immanent in all his works in their first formation and in their continuance.

We need not trouble ourselves with the difficulty about God not being able to answer prayer, as everything has been fixed from the beginning. The difficulty arises from our narrow and anthropomorphic views of God. We must not transfer our weakness to the omnipotence of Deity. We must rather, in our imperfect manner, raise our conceptions to so high a sphere that God would be separated from human infirmities. God sees every existing thing at this instant. He does so every instant. Not only so, but I think he may be held as seeing every past instant and every future instant; in short, the whole past

and future. Now this may be true, I believe it is so, of his love as well as of his knowledge. His love goes forth at this instant to every one of his creatures, just as the sun's rays go forth to every point of surrounding space. All this may be inconceivable to us, as to its mode of operation, but it is surely believable. But it may be that this love goes forth not only to all now existing creatures, it may go forth to all the past of living creatures, I am inclined to think also to all the future. We have some imperfect means of conceiving it, in the experience of human love, in the love of a mother interested in the past events of her son's life, and as she follows him on to the future. But the strongest human affections are limited. Not so with the love of God. It is expressively said, "Yea, I have loved thee with an everlasting love." Of old, from everlasting, his delights have been with the children of men. I apply this to prayer. We are apt to feel when God is said to have ordained the answer in the past ages of eternity as if this were removing God to an awful distance. But when God planned the answer he did it lovingly, and having in view our need and the earning of our hearts. When he actually sends the answer it is under a like influence, he does so lovingly. When he grants the petition it is not against his will, or because he is compelled by his own decrees, but in thorough consonance with his will, lovingly and tenderly, it may be in pity.

¹To the objection, Why then need I pray, since the answer is ordained? the reply is so stale that I am ashamed to be obliged to repeat it. It is an objection which may be taken to every form of activity. A man is in fever. He argues that, if it be predestined whether he is to recover, it is of no use sending for the physician.

¹ A considerable portion of this paper appeared in the *Independent* a few years ago when the Prayer Test was so discussed.

The answer is known to every tyro in moral science. If God has destined that the man recover, he may also have destined that he should send for the doctor. If he declines sending for the proper aid, he may find it destined that he is not to recover. So it is with the answer to prayer. If he prays, he may find that both the prayer and the answer are foreordained. If he neglect to pray, when in duty bound, he may find himself punished by being refused the blessing. In God's providence everything is carried on by means.

There are means that produce their end by direct natural agency. When a man sows, he may expect to reap. It does not need faith to show us this ; a very short sight will enable us to perceive it. But there may be other means which bring about their end by the prearrangement of God, and not by physical power. And this is discerned only by that higher vision which is called faith ; not that it is without reason, but because it is founded on a deeper insight into the character and ways of God. Dr. Tyndall tells us he is arguing against prayer as " a form of physical energy " (p. 764), as " a power in physical nature." I do not know what views may be taken of prayer in the scientific circles in which Dr. Tyndall moves, but I can say that I never met a religious man who claimed such a power for prayer.

No one praying in the right spirit believes that prayer has an influence on the wind, the rain, or health. Its power is over God, who planned all things at first, and acts in the rain, the wind, and the human frame. The God who prompts every grateful, every penitent heart to pray has connected the petition and the good it brings by ties as strong, though not so visible, as those which connect industry with its reward.

The mother prays for her sick child, and it is in answer

to her prayer that our physician comes in providentially with his remedy, suited to the constitution of the child, and the patient is relieved by physical laws, which are, however, subordinated to a higher provision, which the mother may believe in, but which the physician may not, even when he is made to accomplish the end designed.

He who prays in faith is falling in with the grand arrangements or laws (if you will) of the universe quite as much as he who sows in the hope of reaping. It is true, as Luther (quoted by our author) says, that *laborâsse est orâsse*, when it is labor for the glory of God and the good of man; but it is equally true *orâsse est laborâsse* in fulfilling the purposes of heaven.

A second objection is urged. Nobody believes that it is lawful to pray for every object—that it is lawful, for example, to pray that the earth should not move round the sun. “The phenomena of the universe are ranged by people who fully believe in the efficacy of petition in two categories; a class which I shall call Number One, respecting which it is quite useless, if not presumptuous, to pray, and a class, Number Two, of events, which are the legitimate objects of prayer. Now, it is curious to observe that there is no agreement at all among religious people as to the principles on which such a classification should be made” (p. 774). But pious people have a very clear rule for deciding all such cases. They pray for things agreeable to God’s will. When God’s will is intimated to them, no matter how, they will not pray against it. They will still pray, but their prayer now is that the event may be for good, and they be enabled to submit to it. When the boy is sick the pious mother prays that he may recover, if it be the will of God. When he dies she prays that she may be enabled to bear the trial in meekness and patience.

He hints plainly that the class of objects for which we can pray will grow less and less, and those for which we cannot pray will become more and more numerous. "The professed believer must follow, drawn by inexorable power, in the wake of advancing science, and after hard resistance, as always giving up one point after another, and resigning event after event, to be detached from the once great class of objects to be prayed for, and admitting their title of admission into the great class of settled and ordered events, not to be influenced by human interference, and capitulating with the best grace he may when forced to surrender." I admit that in a few, a very few, cases science may tell us what the will of God is before common observation can discover it. But the only effect of this is to change the prayer, "Do this, if it be thy will," a little sooner into the prayer, "Thy will be done."

And this tendency to lessen the number of objects to be prayed for is counteracted by another tendency brought into great prominence by modern science. Does not the latest science show that, as things advance, in time they become more and more complicated, and the issue is that wise men feel more their dependence on heaven? Does not M. Comte's famous classification of the sciences proceed on the principle of the complication of phenomena, and on the circumstance that phenomena become more and more complicated as we approach nearer to man, and becoming most complicated of all in human society? Has not physiology been showing that animals, as they rise in the scale, become more and more complex in their structure? Is not society, as it advances in knowledge and refinement, becoming more and more reticulated? And the greater the complexity the more difficult to foresee events and to find out what God has fixed. The most dependent of men is

the great merchant or the great statesman, who has become involved with the trade of distant nations or the caprices of millions of human beings. Science can tell us what is and must be the tendency of a given force; but it cannot tell us what will be the result of an involved combination of forces. It can tell us where a satellite of Jupiter will be ten thousand years hence; but it cannot say whether his child will be dead or alive a day hence.

But after science has done its utmost, there will remain a vast and immeasurable domain in which, as God's will is not intimated, we may humbly make known our will, adding always, "Notwithstanding, not my will but thine be done." Dr. Tyndall treats us to a long account of religious men who have opposed science and been defeated—I may say justly defeated, as setting themselves against one way in which God makes known his will. But I can't give a far longer list of men who have set themselves to oppose providence and prayer, only to find that, as Beza said, "God's word is an anvil which has worn out many a hammer."

It is urged that facts go to show that there is not an answer to prayer. It is proven that those most prayed for do not live longer than others. Kings and governors have usually had constant and numerous petitions put up in their behalf, and yet their lives are not prolonged beyond the average. Missionaries are prayed for by multitudes that they may be safely carried by sea and land to their fields of labor, and that they may there be spared for usefulness, and yet it does not appear that their voyages are more prosperous than those of others in the same circumstances or that they live to a greater age. Life insurances do not take a less premium from those who are specially prayed for than from those who are not. Looking to these things the physician proposed a Prayer Test. The patients on

one side of an hospital were to be prayed for and those on the other side were not ; and then it was to be determined whether the former recovered while the others did not. This seemed very dexterous. But surely God is not thus to be mocked, and his praying people were not so silly as to be taken in by so preposterous a proposal. It is astonishing to find how ignorant many of our *savans*, deep in the science of matter, are as to moral questions and the evidence by which they are settled drawn from mind and conscience and the obvious method of providence. It is not by such an experiment that the father has to settle how he has to train his son ; that the earnest youth has to determine how he should set out on the journey of life ; that the statesman has to fix on measures for promoting the welfare of his country.

The very purpose of God in governing the world by general laws is to secure that his intelligent creatures may from the past anticipate the future, which they could not do, were there no regular law or if this was disturbed by constant interferences. We may be sure, then, that God will not interfere with laws or regulations which he himself has devised, so as to lessen foresight or disturb reasonable expectations. We cannot conceive that God should so order events as to help or hinder insurance companies. In answering prayer God, humanly speaking, has to look to and to weigh a great many considerations—that is, facts and reasons which would have to be considered by man in like circumstances. He has to act as wise parents have to do in granting or refusing the request of their children. In the answer to be given to his prayers every one who knows himself will leave a discretion with God. It is surely a happy thing for God's creatures that he does not grant every one of their wishes. I do not know that those who pray for kings expect them to live longer than other

men. Christians cannot consent, while they pray for some men, to bind themselves not to pray for others. They will not petulantly conclude that God does not hear or answer prayer because he has not allowed them all that they demanded. In the experience of years they will discover that God has been kind to them, even as their parents were in their childhood, in refusing them certain things which they earnestly wished to obtain.

Professor Galton thinks that if it were known that God answers prayer, insurance companies might take a lower premium from those that did pray, or were much prayed for. But every man of sense sees that the infinitely wise God could not be expected to fall in with such a mode of procedure, as it would only promote religious hypocrisy. There can be no doubt that good moral men live longer than others, but life insurance offices do not lessen their charges to suit the supposed character of the applicants; if they tried to do so they would fall into favoritism and perpetual mistakes;—they have to satisfy themselves by excluding those whose known vices might injure their health and shorten their days. We can conceive of the wise God, who sends rain to the evil as well as to the good, acting on a like principle, or rather in a sovereign way of his own, so as to prevent the evils that would arise from the indiscriminate granting of petitions.

I assume that God is all-powerful, that he is all-wise, and that he is good. I hold by these truths on good and sufficient evidence notwithstanding that there is evil in the world. But it is clear that in dealing with man as possessed of free will and as having sinned, he must act on principles (if we can so speak) different from those on which we act, and which we may not be able to comprehend. For us to allow evil, which we have power to prevent, would be wrong, except, indeed, in circumstances in which

we are not at liberty to interfere with the free will of the agent. But were God bound by any such obligation, it is clear that evil would not exist in the world. Altogether, God's ways are not, and cannot be, like our ways in all respects. Many of them, in their device and mode of execution, lie in a region altogether beyond our ken. We must believe, indeed, that in nature and kind justice with God, must be the same as justice with us. We cannot conceive that the wise and just God should act capriciously or arbitrarily, but he may, always in consistency with his character, act in a manner which we are not in a position to judge of.

What advantage, then, has the praying man? Much in every way. We pray as a duty, and it becomes pleasant. We unbosom ourselves to Him, and find that we have comfort in doing so. We confess our sins to God, and feel a relief as if we had thereby thrown off a load. We pray for the forgiveness of sins, and trust that God has delivered us from the guilt. We ask divine aid to enable us to resist the evil, and feel that we have got strength in the very act. We seek to have communion with God, and feel at times that we have succeeded. We do not address him as we would these lofty mountains and these stars which cannot reciprocate our feelings. We speak to him in the confidence that he is hearing us, and that he is speaking to us. We become like him as we look to him, as we have seen the image of heaven reflected on the bosom of a tranquil lake spread out beneath it. We pray in the certain belief that God hears us. We ask for temporal gifts so far as they may be agreeable to God's will, for our own higher good, and the good of others. We are sure that as God hears our prayers so he will answer them; but we do not dictate to Deity and prescribe to him what

the answer shall be and how it must come. We pray for what God sees we need, and are sure it will be supplied. We pray most earnestly for spiritual blessings, knowing that these will always be agreeable to the will of God. As we thus hold intercourse with God our will becomes assimilated to the divine will, and we thank him for what he withholds as well as for what he grants.

A father encourages his child to make known his wishes, and lets him know that they will be attended to. This does not imply that every one of the petitions will be granted, even those that are capricious, or which the father knows might injure his boy. He complies with the entreaties, so far as this can be done consistently with the wise regulations of his household, so far as circumstances admit, and so far as the youth's best welfare is not interfered with. It is much the same with our heavenly father when we are assured that, "if men who are evil know how to give good things to their children, much more shall our heavenly father give good things to those who ask him." The two cases, indeed, that of our heavenly father and that of an earthly father, are not identical, but they are parallel, and the earthly may throw light on the heavenly. God, in his sovereign wisdom and for our good, has laid down governmental laws, and these he cannot be expected to contravene; and much as he may yearn to grant the requests of those who pray, yet he will not do so when this might injure their best interests; he will not, for instance, give them wealth when this might make them vain and proud, or tempt them into sinful indulgences.

SECTION VI.

WHAT IS OUR WORLD?

This is a question which thinking minds have been putting and pressing from the beginning. It is one asked with intense eagerness and earnestness in these our times when science is making so many discoveries, when the heavens are opening to us new wonders, more especially as to the identity of the composition of stars and earth, and when the life and growth of plants are giving us glimpses of the inner secrets of generation and heredity.

We know what the experience of man says. We know what the Scriptures say. What does science say? Do these three testimonies conflict? or are they substantially the same? We are in the heart of a profound subject which philosophers like Kant dignify with the name of Cosmology when they represent all higher and deeper thought as clustering round Theology, Anthropology, and Cosmology.

I.

When we believe that this world is the workmanship of God, all-powerful and benevolent, our first idea is that there should be nothing in it but beauty and benignity. The youth setting out on the journey through it is apt to expect to find only health and happiness, peace and prosperity, sunshine and calm, flowers and fruit, love and smiles. There are abundance of such scenes on our earth's surface, and we should feel a pleasure in beholding them; children prattling, young men and maidens romping, pure and happy homes, prosperous lives in which

character and honesty are rewarded, and contented old age living on the earnings of industry and activity. This is the life which the youthful fancy paints, and which the fond mother wishes for her son. But other aspects press on our notice whether we wish it or not. If there be blue sky over our heads, it may soon be covered with clouds big with devastating torrents. If there be lovely landscapes on the earth, there are also howling deserts and malarial marshes. There is the light of day, but quite as lengthened is the darkness of night into which the day sinks. You see promising buds and blossoms, but how many are nipped by the frosts and blown away by the wind. The youth finishes his laborious education to find himself smitten down and his attainments apparently lost. The father expects the son to help and sustain him through life, and at last to lay his head in the grave, but has instructed to perform that duty to his son. That young man has to weep over the grave of one whom he expected to be his bride and his life-partner. The serpent with his slime and his sting crawls into our home, pleasant as Paradise, and we have to leave it, hurt and sorrowing. If there be high enjoyments in our world there are also temptations and sins polluting the waters and making them offensive. We have all seen the hope of his family and his friends led astray, and, as they hold down their heads in shame, they have to consign his remains to a dishonored grave. The drunken son is brought home to the house of his mother, who is thereby driven to a mad-house.

II.

It is a curious circumstance that later science seems to be exhibiting our world under the same double aspect. In my younger years *savans* enlarged admiringly, as well they

might, on the perfect order and beauty of the heavenly bodies, and of the adaptation of all things to one another, and of a good end in the plant and animal. One would have thought that the world had come forth in the fulness of perfection and as a good God might wish it. I remember that I was not altogether satisfied with the account then given of nature in college lectures and books of science. I felt as if *prima facie* it was scarcely in consonance with Scripture, and really inconsistent with our experience. Scientific men showed us order and law as universally prevalent, and did not seem to think that there was anything else. It was believed that the great French mathematicians of the end of last century and the beginning of this, had demonstrated that if this world were not interfered with, it would go on forever. Paley had shown that there was an evidently designed fitting of one organ to another in every part of the animal frame.

But I could not but observe another order of facts with a different look and expression. Everybody sees and feels, and every candid man acknowledges, that there is evil in our world as well as good. There is undoubtedly pleasure in our world, but there is also pain, and the one is quite as much a reality as the other. If there be happiness continued through years, there is also at times prolonged misery. Law certainly reigns everywhere, but it seems often to work blindly. The law of gravitation holds a building firmly on its foundation, but it is quite as ready to pull it down and murder those who are dwelling in it. The fire that warms us may raise a conflagration to wrap thousands in its flames. The elements which unite to produce our food, may combine to produce poisons. If there be pure air from heaven, there may also be malarial damps from the earth. If there be widespread health, there is also disease. You notice that mother,

to-day so happy as her eye follows that child who is playing around her ; to-morrow that child is languishing on a bed of distress, and next week has to be buried out of sight. To-day this man is strong, as if he were to live for years ; to-morrow he is stretched helpless on a bed of distress, with no hope of ever rising. This year there is an unbroken family—father, mother, and children—next year the children are orphans, cast upon the world's cold charity. That young man has prepared himself at school, at college, in the shop or factory, for honorable work, but is not allowed to enter upon it. If there be multitudinous life, it everywhere terminates in death.

There is a worse evil than pain, there is sin. If we do not purposely shut our eyes, we have to see it everywhere. In every age and in every country there have been wars and rumors of wars. History has consisted very much in the narrative of political strifes and bloody battles. In every great city there are sinks into which filth is constantly pouring. Even in our quietest rural districts, and our apparently happiest homes, are fends and lusts breaking out in crimes, in slanders, fights, divorces, and murders, which startle the community. We do not need to look to distant places to discover all this, we find it close to us breaking out in ourselves in evil words and deeds ; we feel it festering within us as a fever. We need not, we cannot deny it. There is pain in our world, and this is an evil ; there is sin in our world, and this is a worse evil.

Later science has shown us that the worlds have been formed as they now are in the course of long ages, in which have been warring elements, convulsions with violent upheavals, with earthquakes, with volcanoes, with seas overwhelming continents, and whole races perishing because they have become unfitted to their new surroundings. There is a dissipation of energy which in the end will

break up our world, and burn it with fire. It has been shown by geology that when animals were created capable of receiving pleasure, they were also liable to suffering and death. "A struggle for existence" is the characteristic of animated life from the beginning.

All this while there are everywhere order and care. The arguments of Paley and other writers on natural theology in behalf of the existence and benevolence of God are as strong as they ever were and were thought to be by our fathers. When we look to this crowning goodness we feel as if there is something unnatural in the evils which appear in our world. It looks as if creation were unwillingly subject to them. Nature seems to rebel against the evils that are in it. "For the creation was made subject to vanity, not willingly, but by reason of him who hath subjected the same in hope." The creation is striving against the tendency to evil. If there be diseases in our world there are also remedies. Nature everywhere seeks to restore itself. If there be winters in the succession of seasons, they are followed by springs, going on to summers and autumns. If there be the deaths of the individuals, there is the continuance of the race. If there be travailing, it is in order to a birth. If there be deaths there are also resurrections. Nature is struggling, but it is in order to improvement. It is ploughing in order to sow and reap in due season. All creation is moving onward, but also upward. There is a struggle for existence, but a certainty that in the end the good will gain the victory.

III.

In all this, science seems to be coming nearer to the account given in Scripture. Take only one passage: "For the earnest expectation of the creature waiteth for

the manifestation of the sons of God. For the creature was made subject to vanity, not willingly, but by reason of him who hath subjected the same in hope. Because the creature (creation) itself also shall be delivered from the bondage of corruption into the glorious liberty of the children of God. For we know that the whole creation groaneth and travaileth in pain together until now." (Rom. viii., 19-23.) Socrates said of the philosophy of Heraclitus, "What I understand is so excellent that what I do not understand I am sure must also be excellent." I understand so much of this and other like passages, but I believe it contains depths of meaning which I cannot fathom. It opens to me glimpses of objects more remote than the stars and more glorious; of nebulae which we may not be able to reduce, but which shine across our sky like the Milky Way with a mild lustre. There is evil, "vanity," "corruption," and "bondage," and a deep sense of the evil, "a groaning" and "travailing in pain;" but there is a "deliverance," "an earnest expectation," and "a waiting," and a "glorious liberty," and "manifestation" of restored sonship. This is the account in the Scripture of our world. I believe it to be given by inspired men. Some, indeed, may be disposed to argue that it is the product of the genius or reason of man; but if so, such views and sentiments must have come from the deepest heart of humanity, joining with experience and science to give their combined testimony as to the character of our world. Man craves for a deliverance and would fain look for a deliverance. He is conscious of the burden; he groans under it and cries for relief. The Scripture tells us who the deliverer is, and what the nature of his deliverance.

We see clearly that the work of deliverance must be a stupendous one, reaching over all creation if it is to be as wide as the evil. According to Scripture God accomplishes

it in a particular way. The deliverer says that "he must needs go up to Jerusalem and there suffer many things." When he said this Peter took him and began to rebuke him, saying, "Far be this from thee, Lord." Our rationalists take the same view. And yet there is a fitness and a propriety, in a world of suffering, that the deliverer himself should suffer. God as God cannot suffer. But he takes upon him our nature and has suffered and died. God is love and he pities us. God as God cannot have sympathy with us. But as having suffered he has a fellow-feeling with all our infirmities. So we have the very remarkable expression that even Christ himself became "perfect through suffering," not perfected thereby in spiritual excellence, for he had been perfect from all eternity in holiness, but made perfect as our mediator and as having the human susceptibility of sympathy added to his divine love.

The reconciliation has many aspects. There have been keen disputes among theologians as to the precise nature of the atonement. These spring very much from the circumstance that some look upon it exclusively under one aspect, neglecting the others. The essential feature of it seems to be that in it Christ suffers for us. If we leave out this, we are leaving out the deepest principle in the transaction. He had to say, "I have a baptism to be baptized with, and how am I straitened till it be accomplished." He "groaned in the spirit and was troubled" as he contemplated death at the grave of Lazarus. In his agony in the garden he prayed, "if it be possible let this cup pass from me;" but it was not possible for it to pass if the deliverance was to be accomplished. More mysterious still, he had to say ere he expired, "My God, my God, why hast thou forsaken me." To this earnest appeal no answer was given. These heavens continued shut and silent. "My God, my God, why hast thou forsaken me." Let us come to the foot

of the cross and give the answer. "Thou wert forsaken because of our sins. 'Surely he hath borne our griefs, and carried our sorrows: yet we did esteem him stricken, smitten of God, and afflicted. But he was wounded for our transgressions, he was bruised for our iniquities: the chastisement of our peace was upon him; and by his stripes we are healed.'"

This is the keystone of the arch. But there are other aspects which ought not to be overlooked. There is what is called the moral aspect. Herein God manifests his love, and yet upholds the integrity of his law. The sin is condemned and yet the sinner is saved. Farther, it is evident from this passage and from others that the rectification extends beyond our world. Science shows that every part of our cosmos is connected with every other. There is an attraction which binds all the bodies in one system. There are the same elements in distant stars as our earth. I move my arm, and an energy is let loose which may reach the most remote regions of space. It looks as if in like manner the restoration secured in Christ reaches over all creation. The earnest expectation of creation waiteth for the revealing or manifestation of the sons of God. The creation feels as if it should claim God as a father, and yet as if this fatherhood, through the evil, had been lost, and it looks for a restoration, for the revealing or manifestation of the sons of God. The grand reconciliation is effected by him who "made peace through the blood of his cross, by him to reconcile all things unto himself; by him, I say, whether they be things in earth, or things in heaven."

Such is our world as attested by three witnesses. All men have seen and felt the evil, and this whether they look at it seriously or not, whether they avow it or not. Some have viewed it with a growling malignity, and argued that its existence shows that there is no proof of God's ex-

istence. The ancient sceptics gloated over the disorders in our world, the earthquakes, famines, and pestilences, the failure of good men and the success of bad. As they looked at these things James Mill the father, and John Mill the son, concluded that if there be a God all-powerful and good he would not have permitted these things.

I am not here to enter on the subject of the origin of evil. In my younger years I tried once and again to solve the problem. In my later life I have given up the attempt. I have become convinced that no one has cleared up the mystery, which remains as the one dark cloud in our sky. The great German philosopher, Liebnitz, propounded a grand doctrine of optimism which asserts that this is the best possible world, and this doctrine was expounded with glowing eloquence by Bolingbroke and in terse verse by Pope. This style of sentiment prevailed in our literature for more than a century, and people did little to remove the evils in our world or to elevate the great mass of the people, many of whom sank in our great cities to the lowest depths of degradation. But in later times thinkers have been obliged to view the other aspects. Astronomy teaches the generation of worlds out of star dust. Geology tells us that death has reigned over all animated beings from the beginning. In all past ages there has been a struggle for existence. We have now pessimism, which declares that the world is the worst possible, proclaimed and defended by a few moodish men of genius, and youths are wondering at it, and finding a confirmation of it in the circumstance that they are not meeting with an encouragement suited to their merits and their opinion of themselves.

On two points I have reached assurance : one is that God is not and cannot be the author of evil, and on the other hand, that those intelligent creatures who commit sin are

themselves to blame for it. Carrying these two convictions with me I leave speculative questions with God, of whose existence and goodness I have such abundant proof.

On one other point I have reached assurance: the existence of pain is not inconsistent with the existence of love. Suffering is one of the most potent means of calling forth love. The shepherd left the ninety and nine sheep in the wilderness to go after that which was lost. There was a tenderness in the interest which the father took in his returning prodigal son beyond what he felt in the one always with him, and which led him to run out to meet him and embrace him in his arms. "There is joy in heaven among the holy angels over one sinner that repenteth." "Pure religion, and undefiled before God and the Father, is this: To visit the fatherless and widows in their affliction, and to keep himself unspotted from the world." Man may feel at times as if he were kept at an infinite distance from God; yet if he would but think of it there is an endearing element in the love of God toward sinful men not found in his love to the holy angels. There is pity: "Like as a father pitieth his children, so the Lord pitieth them that fear him." That apparent frown which we see at times on the face of God is assumed only because God has to mark his disapprobation of our conduct; his love all the while being ready to burst out. Thus it was that God was led to give up his only begotten son to suffer and to die for us. It was this affection which led the Son to leave the bosom of the Father and suffer and die on earth. The highest exercise of love which the universe discloses is the love of God—Father, Son, and Holy Spirit—toward fallen and suffering man. "Herein indeed is love." The mystery of darkness is swallowed up in the mystery of light, as we "comprehend with all saints what is the breadth, and length, and depth, and height;

and to know the love of Christ, which passeth knowledge."

IV.

There are literary and scientific men in the present day who have outgrown, as they claim, the gospel; outgrown it as the man outgrows the clothes of his childhood, as the young plant bursts from the envelope that protected it. But what have they substituted? A skeleton with the living form stripped off. Nothing, absolutely nothing to give peace, and life, and assurance. Thomas Carlyle, whom all persons of literary tastes are talking about in these times, when every feature of his strong but not very lovely character is exhibited to us, used to talk of the "eternities," "the infinitudes," the "realities," "the moralities," "the idealities." Matthew Arnold speaks of "sweetness and light," and "making for righteousness," things equally empty and inane. These at best are abstractions, not filling up or satisfying the heart, as they are without a living God and a loving Saviour. A younger set of men, their true offspring, have sprung up among us, and going on in the same direction have scattered and dissipated the empty truth retained in these generalities. Those who have given up Christ find that they have to give up God, and those who have given up God find that they have no sustaining morality left them; no peace, no hope of immortality.¹ "O Father, Lord of heaven and earth, thou hast hid these things from the wise and prudent, and hast revealed them unto babes. Even so, Father, for so it seemed good in my sight."

¹ Some years ago I had a call at my house, in Ireland, by a young nobleman with whom I was at that time intimate, and who has since risen to eminence as a statesman (I mean Earl Dufferin), who introduced to me his friend Lord Ashburton. The nobleman introduced took

What, then, is the conclusion to which we have come in our cosmology? Our world is not all good on the one hand, nor is it all evil on the other. In it by the capacities we possess and the opportunities afforded we can discover truth solid and satisfactory, but in which we may fall into error if our eye be not single. It is a world in which we know only in part, but in which we get glimpses of vastly more which we do not know. It is not a world at rest, but a world in perpetual activity, every atom and every mass in rapid and unceasing motion, proceeding by conflicting forces, but all in a regulated system. There is inflexible law, in which we can trust, and to which we can accommodate ourselves to secure ends, and yet a providence whereby it is made to take care of us and supply our

me aside and said, "You know that I have lately lost my dear wife, who was a great friend of Mr. Carlyle's, and I have applied to Mr. Carlyle to tell me what I should do to have peace, and make me what I should be. On my making this request he simply bade me read Goethe's *Wilhelm Meister*. I did so, and did not find anything there fitted to improve me. I went back to Mr. Carlyle, asking him what precise lesson he meant me to gather from the book, and he said 'Read *Wilhelm Meister* a second time.' I have done so earnestly, but I confess I am utterly unable to find any thing there to meet my anxiety, and I wish you, if you can, to explain what Mr. Carlyle could mean." I told him that I was not the man to explain Carlyle's meaning, if indeed he had any definite meaning. I told him plainly that neither Goethe nor Carlyle, though men of eminent literary genius, could supply the balm which his spirit needed; and I remarked that Goethe's work contained not a little that was sensual. I did my best to point to a better way, and to the deliverance promised and secured in the gospel. I do not know the issue, but I got an eager listener. Carlyle wished to persuade his mother, a woman of simple but devoted piety, that his advanced faith was the same as that which she held firmly, and so much to her comfort, only in a somewhat different form. But in fact the mother's faith was crushed in the form in which the son put it, when it became a skeleton, as different from the life which sustained her as the bones in our museums are from the living animal.

special wants. It is a world in which God does not hold sensible communication with his creatures, but may be approached in prayer, which he will answer in his own way. In it we have a clear view of a moral law requiring obedience, but which we have disobeyed. There is evil in it, a universal evil—it is of no use denying this—but there is the universal hope of a deliverance. There has been a fall, but there has also been a recovery. God seems to have withdrawn, but by faith in the appointed mediator we can rise to communion with him. Our world is not perfect, but there is evidence that it is going on toward perfection. In it we are in a state of probation; if we stand it, it will issue in promotion to a higher sphere. Let us properly understand our position and conform to it.

LOCKE'S THEORY OF KNOWLEDGE

WITH A NOTICE OF

BERKELEY

BY

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"LAWS OF DISCURSIVE THOUGHT," "EMOTIONS," ETC.

DEAL

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DIVERS ASPECTS OF FIRST PRINCIPLES.

GENERAL INTRODUCTION.

THE aim of this Part of the Philosophic Series is to treat historically the chief topics which have been discussed dialectically in the previous Numbers. The special doctrine to be thus illustrated is that of first principles. The discussion on this subject began with Locke's denial of Innate Ideas in the First Book of his Essay on Human Understanding, published in 1690, and has been continued ever since, particularly by such original writers as Hume, Kant, and Herbert Spencer. Our work would be incomplete without a historical and critical review of these leaders of thought. All of them have exposed prevailing errors, and all of them have caught glimpses of important truth; I have to add that all of them have promulgated serious error. Can we by any magnetic process draw out the pure metal and allow the dross to sink?

Our notices will be critical as well as historical. But in criticism there are always principles involved, and these ought always to be formally stated, that all may perceive the ground proceeded on, and be able to sit in judgment on the critic. This I propose to do in this Introductory Section.

Believing as I do in first truths, I am convinced that ~

e. g. there has been confusion in the account given of them, and consequent errors in the conclusions drawn. Much clearness may be imparted by attending to certain distinctions which I would thus illustrate. If we are considering the subject of gravitation, we may look first at it in its actual operations as seen by the senses, say, in a body falling to the ground ; secondly, as a deep law in the very nature of bodies ; and thirdly, the expression of that law by Newton. We may in like manner, in inquiring into a fundamental law of the human mind, regard first its actual operations falling under the eye of consciousness, say, when on noticing an effect we look for a cause ; secondly, the law in the mind which is followed ; and thirdly, the axiomatic form taken by that law, that everything which begins to be has a cause. The errors committed by the defenders of primary principles have almost all arisen from overlooking this threefold distinction. There is a fourth principle which needs to be brought into prominence in the present day, when it is so much overlooked, namely, that all intuitions look at things, and that this should be expressed in the form which the generalized law takes.

I. Our intuitions appear as PERCEPTIONS. We perceive self in a certain state. We perceive external objects as affecting us and resisting our energy. We perceive relations between things as that this quality implies a substance—say, this weight implies a heavy body ; that this effect, say a house on fire, implies a cause ; and that this thing A, being equal to B, which is equal to a third thing, C, is also equal to C. We have also moral perceptions, as that this deceitful act is wrong and deserves punishment. Under this aspect our primary truths are before the eye of consciousness. Locke is right, so far as these are concerned, in denying that they are innate ; they

come forth only when the mind begins to act. Individually they are all singular. There is a subsequent process involved in drawing the general law out of them.

II. Underneath these perceptions are REGULATIVE PRINCIPLES. These are not before the consciousness any more than the law of gravitation is before the senses. The bodily eye sees an apple fall to the ground, but does not see the law of universal gravitation which all the while is acting. Just as little does the internal eye see directly the fundamental laws of thought or belief. They are in the mind and deeply seated there, just as the power of gravitation is seated in matter. They constrain us to believe in our personal identity; that it is impossible for the boy to eat his apple and yet have his apple preserved to him; that every occurrence has a cause, and that hypocrisy is to be condemned. These principles may be said to be innate (and Locke is wrong when he denies this), for they are in the mind when it begins to act. They are in our very nature and constitution, and are often so appealed to by Bishop Butler and the Scottish School of Metaphysicians. On the supposition that there is a God who made us and gave us our endowments, they have the sanction of God and can plead his authority in behalf of their decisions. They are in our nature and founded on the Divine nature.

III. They may be generalized into PRIMITIVE LAWS OR AXIOMS. They are thus formed by a discursive process out of the primitive perceptions, just as the law of gravitation is formed by generalizing its individual operations. We perceive that we are the same person to-day that we were yesterday, and that we are the same to-day as we were a week ago, or a year ago, and thus reach the law, that we always carry with us an identity. We perceive that this effect has a cause, and that we would declare of

every other effect that it has a cause, and thus lay down the rule that every effect has a cause.

Our primitive perceptions are varied and are innumerable. We have such perceptions every hour, I might almost say every minute, of our waking existence. We seem continually to have a consciousness of self and of body as affecting self, say, of the ground we stand on, of the chair we sit on, of the air we breathe. But as to the great body of them we are not at the trouble to form them into general laws. As being generated by regulative principles without our noticing them, we act according to them without being at the trouble to form them into laws; indeed, we do not so construct them except for certain purposes, only, in fact, for scientific, but especially for metaphysical ends. While constantly employed, they are not usually before the mind as laws, any more than the law of gravity is before the mind when we drop a hot body from our hand expecting that it will fall.

It is in the formation of these laws that error may come in. There is no error in our primitive regulating principles; they have the sanction of our constitution and of God. There will be no error even in our primitive perceptions so far as they are primitive, and unless we mix up prejudices with them. But there may be mistakes in the generalized axioms that we construct. There are apt to be mistakes because of the complication of the phenomena of the mind, and because we mix up derivative truths and reasonings of our own with the primary truths. It is from this cause that there are so many disputes in metaphysics, and whenever there are disputes there must be error, at least on one of the sides, perhaps in both. We make hasty generalizations, and then claim for them the authority of reason and of God. People say in their haste that every thing has a cause, and are led to draw back

only when they discover that this would compel them to hold that God has a cause; when, discovering that they have committed a mistake, they put the maxim in a more correct form, that every thing which begins to be has a cause. It is only by a very careful observation, along with what Bacon calls "the necessary rejections and exclusions," that we are able from the singular and concrete operations to enunciate precisely the general law which is the expression of the regulative principle. But it is possible, by exceedingly careful inspection, to get the general from the singular, and to express it accurately, and when we do so we have a genuine metaphysical philosophy.

I believe that by far the greater part of the confusion and error on the subject of primary or fundamental truth arises from overlooking these distinctions. Those defending them make assertions, regarding them under one, which hold true of them only under another aspect. Those attacking them succeed in making a plausible statement only by exposing them under one of these sides. Descartes, in standing so resolutely by them, contemplates them mainly as faculties or powers lying deeply in the mind, in short, as regulative principles. "Lorsque je dis que quelque idée est née avec nous, ou qu'elle est naturellement empreinte en nos âmes, je n'entends pas qu'elle se présente toujours à notre pensée, car ainsi il n'y en aurait aucune; mais j'entends seulement que nous avons en nous-mêmes la faculté de la produire." (*Trois objec.*, Rep. Obj. 10.) Locke, in opposing them as ideas or perceptions in consciousness, succeeded in showing that these are not innate. Kant, in calling them *a priori* principles, views them as regulative principles in the mind. Those who oppose him show that the conscious perceptions are not *a priori* in the mind. In these historical papers I hope to show, as to the authors criticised, what were the aspects they looked

at, and what those overlooked. In this way I hope on the one hand, to introduce clearness into a subject which has become so confused, and on the other hand, to give such an account of the constituent principles of the mind, as to remove the prejudices which have been entertained against them, and recommend them to candid minds.

Under the First of these Aspects they have been called Primitive Perceptions, Intuitions, Instincts, and Cognitions.

Under the Second Aspect they have been described as "native laws," "fundamental laws of thought," "forms." Plato (Rep., vii., 51) called it νοητὸς τόπος. Aristotle (De Anim., iii., 4), adopts the view but modifies it, saying it is right, provided it be limited to the noetic power and the forms be represented as not in readiness for action, but in capacity, not ἐντελεχεια, but δυνάμει.

Under the Third Aspect they have been called κοινὰ ἔννοιαι, πρῶται ἔννοιαι, πρῶτα νοήματα, naturæ judicia, *a priori* notions, definitions, maxims, axioms.¹

IV. Our intuitions or primitive perceptions LOOK AT THINGS. This is a point to be especially emphasized in the present day. It has been overlooked because of the almost universal prevalence of an erroneous metaphysical principle. It has been taken for granted commonly, without being positively asserted, that the mind can be cognizant, at least directly, only of itself. Locke, as we shall see, made it percipient only of its ideas, though he was apt to identify his ideas with things. Hume made all human knowledge consist of impressions and ideas without a mind to perceive or an object to be perceived. Kant, in answering Hume, started with assuming only presentations which he called phenomena, and labored from these to get real things, but without succeeding—as I believe

¹ See *Intuitions of the Mind*, P. I., b. ii., s. 2.

every one now acknowledges. The time has come for formally abandoning this philosophic heresy. We should assume that the mind knows things; not appearances, but things appearing. Appearances necessarily presuppose things appearing—even an image in a mirror implies a reflecting surface and rays reflected. In the very first exercise of our faculties we look at things: at the things perceived and the self perceiving them. It is a fact that we regard the colored surface before us, and the resisting energy in it, as realities. If we deny this we are virtually declaring that we cannot trust our cognitive powers, or rather that we have no cognitive powers, and we may give up, as Hume recommends, all philosophic inquiry and attend merely to our instinctive and acquired cravings, as we have no means of reaching positive truth.

It is a favorite mode of procedure in the present day to assume an hypothesis and then prove it to be true by showing that it accounts for every thing and puts it in the right place. The hypothesis that we know realities can stand this test; assume it, and we can go on consistently and find corroborations every hour, nay, every minute. But it is preposterous to make reality perceived a mere hypothesis; we know it quite as certainly as the hypothesis we put forward to explain it, or the supposed verifications. It is pleasant to have these, but they do not prove the known fact.

We are to assume that we know self and not self. Proceeding upon these we have other primitive perceptions. On comparing the present self with the past self at any given time, we know that we are the same. We know of this not-self that it exists independent of our cognition of it and exercises energy. As to many of our primitive perceptions, the object is not immediately before us. This is at once seen to be the case with the two perceptions last

named. Thus, when I perceive that I am the same person to-day that I was yesterday, the self of yesterday is not before the consciousness. But it being brought before us by the memory we contemplate it, and then pronounce the judgment, which proceeds on the remembered fact. When we discover an effect, a thing effected, we decide that it must have had a thing causing it. This is the case with all our primitive perceptions of relations : we perceive them as in the things related.

In our moral perceptions the objects are not before us in the same sense as the self and not self are. But these perceptions all refer to things contemplated. It is upon an act of cruelty, believed to be a fact, that we pronounce the judgment that it is bad. It is in regard to a deed of self-sacrifice and benevolence that we declare it to be good. The act may not be before our senses, it may be far distant, or it may be long past, or it may be in the future, but it is upon the act supposed to have happened or to be about to happen, that the judgment is formed.

It is because this is the nature of our primitive perceptions that the first test of them is self-evidence. Since the days of Leibnitz, and especially since the time of Kant, the first and essential criterion of primitive truth has been commonly regarded as necessity, a necessity in our nature which leads us to know or decide in a particular manner that a quality implies a substance, that charity is good. But the proper statement is, not that an object is real and a proposition true because we are obliged to believe it, but we are obliged to believe it because we perceive the thing existing and the quality as being in the thing. The true mental process is that we look at the thing and perceive the quality in the thing; and we appreciate the benevolent action as in its very nature good.

SECTION I.

A BRIEF SKETCH OF LOCKE'S LIFE.¹

John Locke was born at Wrington, in the pleasant fields of Somersetshire, August 29, 1632. His father was a lawyer possessed of moderate landed property, and took part in the great parliamentary and non-conformist upheaval. He exacted great respect from his son when a child, but when he grew up allowed him greater familiarity, a practice which the philosopher recommends. He got a place on the foundation of the famous Westminster school, and was there trained in the ordinary classical studies of the period. In 1651 he entered Christ Church, Oxford (in the grounds of which they still show the mulberry-tree which he planted), and there he was a diligent student and devoted himself specially to the branches requiring thought. He was reared amid the din of civil war. At school he must have heard the echoes raised by the execution of Charles I., and in college he was in the heart of the Royalist and Puritan contests. Like Bacon, two ages earlier at Cambridge, he did not derive much satisfaction from the studies pursued at college, and longed for new topics and a fresher mode of investigation. He did not follow any profession but he was particularly addicted to the study of medicine, in which Sydenham, the eminent physician of his day, declares that he acquired great

¹ See *The Life of John Locke*, by Lord King, 2 vols.; *The Life of John Locke*, by H. R. Fox Bourne, 2 vols.; *Locke*, by Thomas Fowler—the last giving a good sketch of his Life, but a meagre account of his philosophy.

knowledge and skill. He gave himself by turns to politics and philosophy, living mainly in Oxford and pursuing independent studies there. In 1664, during the Dutch war, he accompanied the king's envoy to the Elector of Brandenburg, and has left a graphic picture of his journey. In 1666, being called in to give medical advice, he became acquainted with Lord Ashley, afterward Lord Shaftesbury, and from that time became the medical adviser, counsellor, and friend of that tortuous statesman. Henceforth his life is partly in Oxford and partly with Shaftesbury, who appointed him to various offices. Though very prudent he became an object of suspicion to the Royal party, and Sunderland, by the king's command, ordered his expulsion. He was not expelled but deprived of his studentship by the dean and chapter of the college. He retreated from this strife to Holland, where he read and wrote and had close intercourse with a number of eminent men who met in each other's houses for discussion; with Le Clerc, Guenilon, the physician, with Limborch, and with the Remonstrant or Armenian party, to whom he attached himself rather than to the Calvinists. The Revolution of 1688 enabled him to return with Queen Mary to his own country, bringing with him the work which he had been pondering for years, the *Essay on Human Understanding*. Now in the maturity of his powers his literary activity was very great. He carried on an extensive correspondence, afterward published, on philosophic subjects with his admirer, William Molyneux, of Dublin, who introduced his essay into Dublin University, where it held sway down to the second quarter of this century, when it gave way before Kant. He carried on a keen controversy with Stillingfleet, Bishop of Worcester, who objected to his negative account of substance as undermining the doctrine of the Trinity. He wrote three letters on *Toleration*, on

which his views, perhaps derived in part from John Owen, who was the Vice-Chancellor of Oxford when Locke was there, were very liberal for his day, though much behind those now entertained ; he would give no toleration to atheists or papists. In a constitution which he drew out for North Carolina he allowed hereditary slavery to exist. He wrote valuable papers on *Currency and Coin*. In 1695 he published *Essay on the Reasonableness of Christianity as delivered in the Scriptures*. He wrote a *Commentary* consisting of paraphrases and notes on the Epistles to the *Galatians*, *Corinthians*, *Romans*, and *Ephesians*, together with *An Essay for the Understanding of St. Paul's Epistles by consulting St. Paul himself*. All these are written in a reverent spirit, such as he always cherished toward God and Scripture, but are decidedly rationalistic.

His health had never been good, and latterly became worse. From 1691 he resided with Sir Francis and Lady Masham, the latter a daughter of Ralph Cudworth, the erudite defender of the older philosophy which Locke was now undermining. On October 27, 1704, he told Lady Masham that he never expected to rise again from bed. He thanked God he had passed a happy life, but now that he found all was vanity, and exhorted her to consider this world as a preparation for a better state hereafter. Next day he heard Lady Masham read the Psalms, apparently with great attention, until perceiving his end to draw near he stopped her and expired a few minutes after, in his seventy-third year.

We see what were the circumstances in which he was brought up. He lived when the Commons were limiting the authority of the crown ; when the Puritans were seeking to tear away every "rag of popery" ; when the non-Conformists were rebelling against church authority, and the Armin-

ians were softening the asperities of Calvinism. When he began to think for himself the ancient logic was still holding its place in the universities and the philosophy was largely analytic and deductive and couched in scholastic phrases. But a spirit was abroad fitted to break all this up as the returning sun does the ice in spring. The stars in the sky that presided over his birth were Bacon, Descartes, Herbert of Cherbury, Hobbes, and Gassendi. All these had declared more or less distinctly against Aristotle, who had ruled for so many centuries, and were introducing new methods of inquiry. Already Harvey, Boyle, and Newton were successfully prosecuting the observational method, and showing how rich mines of wealth it had opened. He was acquainted with the writings of all these men; it is rather a curious circumstance that he seldom quotes them, but of all things he is resolute in preserving his independence and following a course of his own.

His characteristics among metaphysicians were his sagacity and independence, tempered with good sense. He was determined to look beyond appearances into the realities of things. Trained in an ancient university, but at a time when the old was passing away, educated for the bustling profession of medicine, mingling constantly with statesmen, with a social disposition and many attached friends, both in England and Holland, he had a large practical acquaintance with human nature and with mankind. He is bent above all things to have *determinate* (to use a phrase which he is anxious to introduce into philosophy) opinions of his own. It has to be added that having formed, by long observation and thought, a theory on a subject, he was apt to carry it too far and not notice the other truths by which it was limited. His was one of those greater minds which, unlike those which dwell only on differences, are disposed, as Bacon describes it, to fix

their attention exclusively on resemblances to the neglect of exceptions and so form hasty generalizations.

If you look at Locke's portrait you have a good idea of his character. What strikes one at first is the prominence of the bones; brow, nose, cheek, and chin are all marked and decided. Our attention is at once fixed on these, and we do not notice the flesh or softer parts. It is a type of his mind with a strong and bony intellect, but without the finer emotions being visible, though they certainly existed like waters down in the fountain. His expression indicates thought, observation, profound sense, modesty, firmness, decision, and great independence of character. From the very look of him you would see that he is a man who thinks and acts for himself, who sets a high aim before him, whose honesty cannot be tampered with, and who cannot be either drawn or driven from his purpose.

You notice perhaps some irritability, and he tells us he was somewhat hasty in temper, but you perceive that it has been subdued by a stern judgment. In his little work on *The Conduct of the Understanding* he lays down some admirable rules for the guidance of the intellectual powers, but would lay too severe a restraint upon the affections—which are to be cherished and not eradicated. He was possessed of deep and genuine feeling, but it would have improved his philosophy had he given it as prominent a place as he did to the understanding. By looking more carefully at man's emotional and moral nature he might have been led to see that there are ideas of beauty and moral good which cannot be had from the only two inlets into the mind allowed by him, sensation and reflection. He was ever a man of independent thought and was in general a sincere lover of truth, but he was a little too self-dependent: he speaks rather too often and too strongly of

his being actuated by a pure desire to discover truth. It might have been better perhaps, both for his philosophic and religious creed, if he had learned to distrust his judgment a little more, if he had realized that self-confidence is one of the sins to which humanity is liable, and allowed that the love of a favorite theory, such as that all our ideas come from sensation and reflection, may lead to the oversight of facts. Still, when we go along with him we feel that we are walking in a clear and bracing atmosphere with a man of high aim, of noble purpose, and vigorous step, and that to keep up with him is a healthy exercise fitted to invigorate the whole intellectual frame.

His style is described by Dugald Stewart. "It resembles that of a well-educated and well-informed man of the world rather than of a recluse student who had made an object of the art of composition. It everywhere abounds with colloquial expressions, which he had probably caught by the ear from those he had considered as models of good conversation, and hence, though it seems somewhat antiquated and not altogether suited to the dignity of the subject, it may be presumed to have contributed its share toward his great object of turning the thoughts of his contemporaries to logical and metaphysical inquiries" (*Dissertation*, Sec. I.). He can put wisdom in apt and apposite forms. "Good manners are the blossom of good sense, and it may be added of good feeling; for if the law of kindness be written on the heart it will lead to that disinterestedness in little as well as in great things, that desire to oblige and attention to the gratification of others which is the foundation of good manners." He has at times passages of literary beauty. "Thus the ideas as well as the children of our youth often die before us, and our minds represent to us those tombs which we are approaching, where, though the brass and the marble remain, yet the in-

scriptions are effaced by time and the imagery moulders away. The pictures drawn in our mind are laid in fading colors, and if not sometimes refreshed, vanish and disappear" (*Essay*, II., 19). He has a good deal of humor, the usual concomitant of good sense. On his way to Brandenburg, "I met lately accidentally a young sucking divine, who thought himself no small champion, who, as if he had been some knight-errant bound by oath to bid battle to all comers, first accosted me in courteous voice, but the customary salute being over I found myself assailed most furiously, and heavy loads of arguments fell upon me. I, that expected no such thing, was fain to guard myself under the trusty broad shield of ignorance, and only now and then returned a blow by way of inquiry, and by this Parthian way of flying defended myself till passion and want of breath had made him weary, and so we came to an accommodation, though had he had lungs enough, and I no other use of my ears, the combat might have lasted as long as the wars of Troy." "One day when I rode out only to an airing I was had to a foddering of chopped hay or logic forsooth. Poor *materia prima* was canvassed cruelly, stripped of all the gay dress of her forms and shown naked to us, though I must confess I had not eyes enough to see her; however, the dispute was good sport and would have made a horse laugh, and truly I was like to have broke my bridle. The young monks (which one would not guess by their looks) are a subtle people, which dispute as eagerly for *materia prima* as if they were to make their dinner on it, and perhaps sometimes it is all their meal, for which others' charity is more to be blamed than their stomach. The professor of philosophy and moderator of the disputation was more acute at it than Father Hudibras; he was top full of distinctions, which he produced with so much gravity and applied with so good a grace, that ignorant I began to ad-

mire logic again, and could not have thought that 'simpliciter aut secundum quid materialiter et formaliter,' had been such gallant things which, with the sight of stroking his whiskers, the settling of his hood, and his stately walk made him seem to himself and me something more than Aristotle and Democritus. But he was so hotly charged by one of the seniors of the fraternity that I was afraid sometimes what it would produce, and feared there would be no other way to decide the controversy between them but by cuffs; but a subtle distinction divided the matter between them and so they parted good friends. The truth is hog-shearing is here much in its glory, and our disputing in Oxford comes as far short of it as the rhetoric of Carfax does that of Bilingsgate." I have given these extracts from his journal at such length because they furnish a more vivid picture, than I myself could have drawn, of the new philosophy represented by Locke, in its confidence and pride taking a parting look at the old philosophy, represented by the scholastic discussions, passing away in the midst of weakness and ridicule.

SECTION II.

SKETCH OF LOCKE'S GENERAL THEORY.

His theory is a simple one, some think scarcely equal to the complexity of nature. In his Epistle to the Reader he explains the occasion on which the thoughts arose in his mind. "Were it fit to trouble thee with the history of this essay, I should tell thee that five or six friends meeting at my chamber and discoursing on a subject very remote from this, found themselves very quickly at a stand by the difficulties that arose on every side. After we had a while puzzled ourselves without coming nearer a resolu-

tion of these doubts which perplexed us, it came into my thoughts that we took a wrong course; and that before we set ourselves upon inquiries of that nature it was necessary to examine our own abilities and see what objects our understanding were or were not fitted to deal with. This I proposed to the company, who all readily assented, and thereupon it was agreed that this should be our first inquiry."

His aim was to find what subjects the understanding was fitted to deal with, and for this purpose to discover how the mind gets its ideas and what is their nature. The work was written "by catches," and he acknowledges that intervals of "many long interruptions" caused "some repetitions."

His first position, to which he holds most determinedly, is that the mind has nothing innate. This he seeks to establish in Book I., arguing that man has no innate speculative principles, such as "that it is impossible for the same thing to be and not to be at the same time," that he has no innate practical or moral principles, and that the ideas supposed to be innate, such as that of God, are not so.

In Book II. he shows how we get our ideas. Locke is much addicted to speak of truths by means of images, and he supposes the mind to be, "as we say, white paper, void of all characters, without any ideas" (II. 1). He says that "external and internal sensation are the only passages that I can find of knowledge to the understanding. These alone, as far as I can discover, are the windows by which light is let into this dark room; for me thinks the understanding is not much unlike a closet wholly shut out from light, with only some little opening left to let in external visible resemblances or ideas of things without; would the pictures coming into such a dark room but stay there and be so orderly as to be found

upon occasion, it would very much resemble the understanding of a man in reference to all objects of sight and the ideas of them" (II.).

These two inlets he called Sensation and Reflection, or external and internal sense. By these we get the materials of all our ideas. He defines idea as "the object of the understanding when it thinks," and means by it much the same as we would now describe as conscious states or operations of the mind.

Upon these ideas are faculties operating. These are:

- | | |
|-------------------|------------------|
| I. Perception. | IV. Comparison. |
| II. Retention. | V. Composition. |
| III. Discernment. | VI. Abstraction. |

Briefly, the faculties (1) perceive; (2) retain; (3) distinguish between one thing and another; (4) compare, that is, observe resemblances; (5) put objects in new shapes; (6) separate a part from the whole. He shows how, from these materials and by these faculties, we get all our ideas simple and complex of the primary and secondary qualities of matter, of space, power, substance, solidity, and infinity.

In Book III. he speaks of words in relation to ideas, and makes some very important remarks, and some very extravagant ones, as to the abuse of language. This subject does not come specially in our way. It is different with Book IV., where he speaks of knowledge, opinion, assent, and faith. Knowledge is represented as the perception of the agreement or repugnance of our ideas, not of things, but with one another; in some cases the agreement being seen intuitively or directly, and in others by a process in which there may be more or less certainty.

Locke's mind was filled with this theory, he kept it before him for twenty years, from 1670 to 1690, when he published it; but he did not state it in a *determinate* way (to use a phrase of his own), and did not notice other

truths which limited it. Catching the spirit of his times, he had an aversion to the scholastic nomenclature of the middle ages (he speaks with disdain of "their uncouth, affected, or unintelligible terms"), which continued to be used in philosophy down to the beginning of the seventeenth century. In his style he adopted the language of those who were reckoned as the models of talking and writing in his day. As a consequence his phraseology is often conversational and loose. This helped to gain him a hearing in his own age, but has led to his being misunderstood in later times. There have been many controversies as to his precise doctrine on certain points, as for instance, what power he gives to reflection as one of the inlets of knowledge, and what is the relation between his two inlets of ideas on the one hand, and the faculties represented as working upon these ideas on the other. I believe that on some points he has been misrepresented; he has been spoken of as an idealist, a sensationalist, and a rationalist. It will be necessary to examine these charges. I suspect that the *Essay on Human Understanding*, which used to be so famous, is not much read in the present day. The views of it which are entertained by students generally are commonly taken from histories of philosophy and compends, in which Locke is put into an artificial class, in which the comprehensiveness of his philosophy and his specialties are overlooked. It is necessary in these circumstances to have his system reviewed anew. This will enable us to determine exactly what was his view of the understanding, when it will appear that in some points he has been misunderstood both by his admirers and his opponents; that he has retained a larger portion of primitive truth than some give him credit for; while he has not retained enough to furnish a deeply settled foundation for truth.

SECTION III.

MEANING OF IDEA AND REFLECTION.

He defines "idea" as "the object of the understanding when it thinks," and uses it to express "whatever is meant by phantasm, notion, species." The schoolmen drew more or less clearly a distinction between these three phrases. By phantasm, a term derived from Aristotle, they designated the representation of a particular thing, say, of a lily. Notion was used only when some intellectual operation was employed in the formation of it, say, a general notion, or what is now designated concept. Species referred to visible appearance and to objects classified. Locke might have profitably looked to these distinctions; they would have saved him from much confusion; but he has an aversion to all scholastic distinctions. He seems to me to denote by it any of our conscious mental states, as we would now express it, all our sense perceptions, our recollections, our judgments, our moral approbations. As he employs it, the literal meaning of the word as an image always attaches to it, hence he has a difficulty in understanding what a general notion is; for when he regards it as an idea, he looks upon it not as a combination of things by points of resemblance, which it is, but as a figure or fancy which is inadequate to represent a class or concept.

It is evident that Locke views the mind as looking to ideas in all its exercises rather than to things. It will be necessary, as we proceed, to inquire how he gets from ideas to things. At this point Berkeley drove him to idealism,

maintaining that there is no proof of anything but the idea ; and Hume to skepticism, arguing that there is no reality in the idea. But it is certain that Locke thought he could, from the ideas, get to things. He identifies the ideas with the things they represent, and regards the understanding in looking at ideas as looking at real things. He tells us expressly, indeed, that "the mind knows not things immediately, but only by the intervention of the ideas it has of them" (IV., 4). But there are passages in which he speaks of the understanding as looking at material things. "To discover the nature of our ideas the better and to discourse of them intelligently, it will be convenient to distinguish them as they are ideas or perceptions in our minds, and [what seems an extraordinary statement from him] as they are modifications of matter in the bodies that cause such perceptions in us" (II., 8). But our present inquiry is about the meaning of the word. The subject of the relation of ideas to realities will require to be taken up in a later part of this paper.

But this may be the most suitable place for mentioning that I regard Locke as entirely successful in showing that the mind has not within it at its birth the ideas of which he speaks ; that it has not images, phantasms, or abstract notions of any kind. In all this he has dissipated and scattered a whole cloud of errors which had for ages brooded over and darkened the whole subject of the origin and nature of ideas and knowledge.

There has also been a controversy about the use of the word reflection. The phrase was used by Gassendi, by whom it is supposed Locke was considerably influenced, to signify a faculty above sensation reviewing all the operations of the mind. Locke makes it, our observation "employed about the internal operations of our mind perceived and reflected on by ourselves" (II., 1). It denotes some-

thing more than we now express by the phrase self-consciousness, which signifies the knowledge of self in its present state. According to Locke it implies attention, which is an act of the will and is continuous. He says that the ideas of reflection "need attention." He denotes by it the act of the mind in voluntarily bending back and looking in upon its operations. When it was objected to Locke that he could not get our higher ideas, such as those of moral good, from his two inlets, it was answered by some, such as Leibnitz and Stewart, that he could get them from reflection. But this is entirely inconsistent with Locke's theory, which represents reflection as the eye looking in upon the operations of the mind, in which exercise it can see only what is in the mind, and therefore cannot see moral good unless it be already there; and this must be by some other power producing it.

SECTION IV.

OFFICES DISCHARGED BY THE FACULTIES.

What is the relation of the faculties to the two original inlets of knowledge? This is a subject on which Locke has not expressed himself very clearly. From his metaphorical expressions it looks as if ideas came into the mind from without. We can understand how this might be so far as sensible objects are concerned. When it is asked "how bodies produce ideas in us," it is answered, "that it is manifestly by *impulse*, the only way which we can conceive bodies operate in" (II., 8). But what does impulse mean when applied to an action on mind by matter? Then, it is not conceivable that our ideas by reflection, which are wholly within the mind, could have come from without.

He represents the ideas coming in by these inlets as *passive*, and such as the mind cannot get rid of. But it does not seem as if formed ideas come in after this manner, but merely the *materials* of ideas. Both the phrases *inlet* and *materials* are metaphorical and somewhat materialistic. It does not appear that the inlets furnish ideas till the faculties, till at least perception works upon them. "To ask at what time a man has first any ideas, is to ask when he begins to perceive; having ideas, and perception, being the same thing" (II., 9). "Simple ideas are suggested and furnished to the mind only by those two ways above mentioned, viz., sensation and reflection" (II., 2). And yet a little further on he says, "Perception is the first faculty of the mind employed about our ideas" (II., 9); as if we had first ideas and then perceive them. "Our ideas being nothing but actual perceptions in the mind which cease to be anything when there is no perception of them" (II., 10). He says, "Perception being the first step and degree toward knowledge, and the inlet of all the materials of it;" and again, "Perception is the first operation of all our intellectual faculties, and the inlet of all knowledge into our minds" (II., 9). How are we to bring a consistent whole out of these various statements, giving its office to sensation and reflection on the one hand, and to perception on the other? Before we can answer the question we must notice that all the other faculties are employed about the ideas as well as perception. Thus he tells us that there is "no knowledge without discerning," that is, "distinguishing between the several ideas we have." In particular, he is obliged to give a large place to the faculties in discovering relations, such as those of identity, and of cause and effect.

Locke speaks everywhere of the ideas and knowledge which men may obtain "by the use and due application

of their natural faculties" (I., 3). He asserts that "men, barely by the use of their natural faculties, may attain to all the knowledge they have without the help of any innate impressions, and may arrive at certainty without any such original notions or principles" (I., 3). Here we may notice his opposition to everything inborn, but at the same time his distinct recognition of the important offices discharged by the faculties. It looks as if, while denying innate ideas, he made the faculties perform somewhat of the same offices as the *a priori* principles, or primary truths, are supposed to do by their advocates. Had Locke carefully and systematically unfolded all that is in the faculties, it might have been seen that there is not after all so great a difference between his views and those of the philosophers who oppose him, as is commonly imagined. But it would thereby appear only the more clearly that he was guilty of a great and inexcusable oversight in not telling us precisely how much the faculties can do. The following passage helps to let us see what his views were: "Had they examined the ways whereby men come to the knowledge of many universal truths, they would have found them to result in the minds of men from the being of things themselves, when duly considered, and that they were discovered by the application of those faculties that were fitted by nature to receive and judge of them when duly employed about them" (I., 4). Here we have two very important principles. One is that knowledge comes from the *consideration*—he should have said from the *perception*—of the being of things; a most important truth, which will require to be separately considered. The other is that men obtain them by "the application of their faculties."

He certainly ascribes to the faculties very important functions. He gives them the power of *suggesting*, a ca-

capacity which might open up wide fields. Existence is an idea suggested to the understanding by every ^{subject} (II., 7). Among all the ideas we have, as there is none suggested, so there is none more simple than that of unity (II., 16).

He allots a very important place to intuition. "Our highest degree of knowledge is intuitive without reasoning." "For if we will reflect on our own ways of thinking, we shall find that sometimes the mind perceives the agreement or disagreement of two ideas immediately by themselves without the intervention of any others; and this, I think, may be called intuitive knowledge. For in this the mind is at no pains of proving or examining, but perceives the truth as the eye doth light, only by being directed toward it" (IV., 2). "Some of the ideas that are in the mind are so there, that they can be by themselves immediately compared one with another, and in these the mind is able to perceive that they agree or disagree as clearly as that it has them. Thus the mind perceives that the arch of a circle is less than the whole circle" (IV., 17). He tells us "we have an intuitive knowledge of our own existence" (IV., 3). He goes so far as to declare, "It is on intuition that depends all the certainty and evidence of all our knowledge" (IV., 2).

Upon this intuitive knowledge demonstration proceeds, and in it "the mind perceives the agreement or disagreement of any ideas, but not immediately;" it is by intervening proofs in which each step has intuitive evidence. He maintains that of "real existence we have an intuitive knowledge of our own, demonstrative of God's, sensitive of some few other things. All this sounds very much like the doctrine of those who hold by a *priori* truth. I am pleased to find that he regards self-evidence—and not necessity, which Leibnitz and Kant do—as the test of intui-

tive truth. "Whether they come in view of the mind earlier or later, this is true of them, that they are all known by their native evidence, are wholly independent, receive no light, nor are capable of any proof one from another."

But there is a fundamental error in his view of intuition. He cannot, in consistency with his general theory of the mind, looking only at ideas, make intuition look at things. All intuitions are judgments and involve a comparison of ideas. This error was seen at an early date (1697) by King, author of the *Origin of Evil*, and at a later day by Reid, who remarks: "I say a sensation exists, and I think I understand clearly what I mean. But you want to make the thing clearer, and for that end tell me that there is an agreement between the idea of that sensation and the idea of existence. To speak freely this conveys to me no light, but darkness."¹ The primary exercise of intuition seems to be an immediate perception of things without us and within us. It is only thus we can construct a philosophic realism such as Locke meant to hold.

He gives a high and deep place to reason. In replying to Stillingfleet he is able to say, "Reason, as standing for true and clear principles, and also as standing for true, and clear, and fair deductions from these principles, I have not wholly omitted, as is manifest from what I have said of self-evident propositions, intuitive knowledge, and demonstration." He might have stated more strongly that he often appeals to reason; and he was claimed by the Unitarians of last century as a rationalist both in philosophy and religion. From the passage last quoted we discover what he means by reason and what offices he allots it; it includes "true and clear principles," and also deductions from them. It is especially important to notice that it em-

¹ See *Intuitions of the Mind*, Part I., Book ii.

braces "self-evident propositions, int^l. ext^l. knowledge and demonstration." What is this but "the reason in the first degree" of Reid, "the fundamental laws of belief" of Stewart, and the "pure reason" of Kant? Again we discover that Locke meant to stand up for the deep and radical principles which the Scottish and German schools have been defending and settling. But while he means to do this I am not sure that he has done it. For at what place in his system does reason come in? It is certainly not among the inlets of ideas and knowledge, and it does not appear in the list of the faculties working on the ideas. But he certainly brings it in, consistently or inconsistently, and I can only suppose that he makes it an exercise, probably a sort of combined exercise of the faculties. This only makes us regret the more that he has not unfolded more fully the powers embraced in these faculties as they look at things. Had he done so he might have found that these faculties and their properties are truly innate, though the ideas which they produce cannot be said to be so.

SECTION V.

HOW THE HIGHER IDEAS OF THE MIND ARE FORMED.

Having set aside all innate ideas in Book First of his Essay, Locke proceeds, in Book Second, to show how ideas are actually formed: this is from the two sources Sensation and Reflection, and by the Faculties working on the materials thus supplied. He shows this specially as to the ideas which are farthest removed from sense, and are supposed to be innate. It may serve a good purpose to look at the way in which he fashions some of the deepest and highest ideas which the mind of man can form. The

charge against *Wh* is that he cannot form them by the means he calls in.

Existence is 'an idea suggested to the understanding by every object' (II., 7). The correct account is that we know objects as existing, and do not need a suggestion. *Unity* is also represented as a suggested idea, whereas it is involved in the perception of things which are known first as singular. *Our own existence* is known intuitively. This is all right, but surely this implies a knowledge not through ideas but directly. At this place we see clearly the unsatisfactory nature of the theory of knowledge only through ideas.

Body.—It is difficult to determine how Locke makes us reach the knowledge of body. He tells us expressly " 'tis evident the mind knows not things immediately, but only by the idea it has of them " (IV., 3). But he has not succeeded in showing how from an idea supposed to be in the mind he can reach by any legitimate process an object external to the mind and extended. This, however, will require to be separately considered. He distinguishes primary and secondary qualities (II., 8). The Primary "are utterly inseparable from matter, in whatever state it be." How he knows that primary qualities are inseparable from matter he does not tell us. He says that "the ideas of primary qualities of bodies are *resemblances* of them," as if the idea of gold could be properly described as having a resemblance to gold. There is, certainly, some correspondence, though resemblance does not seem the exact word; but how can he know this when he does not perceive the bodies? "The ideas produced in us by the secondary qualities have no resemblance of them." I believe that there is a distinction between the primary and secondary qualities of bodies. But I am not sure that it has been accurately drawn by Locke. Primary qualities

resolved by Locke, very properly, into extension, solidity, and motion, are perceived at once, whereas secondary qualities, such as heat, are mere organic affections for which we argue a cause, and science finds it in molecular motion.

Space.—He is in the same difficulty here as in regard to body, of getting it from an idea in the mind which has no spatial properties. He very properly says that our idea of space is got from touch and sight; I believe he might have said that we get it from all the senses, as by all the senses we know our bodies as extended and resisting our energy.

Time.—It is evident that he cannot get this idea from sensation, so he gets it from reflection: by reflecting on the succession of our ideas. At this point the defect of his theory has been pointed out by Leibnitz and Cousin. Reflection can perceive only what is in the mind, and cannot perceive succession unless it be already there. Time is one of those ideas which come in always in the concrete with the exercise of the faculties; in memory we recall an event as having happened in the past.

Substance.—Evidently he is greatly troubled with this idea, and yet he has not the courage to avow it. Stillingfleet, a man of scholarship, though not of much philosophical ability, charges him with denying or at least overlooking this idea. Locke wrote a courteous and elaborate reply in which he shows a good deal of fencing, but no very decisive statement. He is indignant at his opponent for making him deny the existence of substance. He argues that it exists, but certainly not on grounds very consistent with his theory. He acknowledges that substance is unknown to us (II., 23); he evidently cannot get it either from sensation or reflection, but he asserts, "all sensible qualities carry with them a supposition of a substratum to exist in" (II., 23). "We cannot conceive how

sensible qualities should subsist alone, and therefore, we suppose them to exist in some common subject." Here he makes our conception a test of truth, and resorts to a supposition which he cannot justify on his theory. We know the substances mind and body as having being, independence of our observation of them, and as having potency.

Power.—His views on this subject, which has come into such prominence since the days of Hume, contain some important truths, but are very far from being adequate. Power being the source from which all action proceeds, the substances wherein these powers are when they exert this power are called causes (II., 21). I am glad to find him placing power in substance. His account should be quoted in full (II., 21): "The mind being every day informed by the senses of the alteration of those simple ideas it observes in things without, and taking no notice how one comes to an end and ceases to be, and another begins to exist which was not before; reflecting also on what passes within itself, and observing a constant change of its ideas, sometimes by the impression of outward objects on the senses, and sometimes by the determination of its own choice; and concluding from what it has so constantly observed to have been, that the like changes will be made for the future in the same things by like agents and by the like ways; considers in one thing the possibility of having any of its simple ideas changed, and in another the possibility of making that change, and so comes by that idea we call power." He *concludes*, but from what premises he does not tell us, and from this theory he cannot find a premise which will guarantee such a wide conclusion. He simply tells us, "the mind must collect a power somewhere able to make that change, as well as a possibility of the thing itself to receive it." The word *must* makes the appeal to necessity which he cannot legitimately

employ. "Again, from the observation of the constant vicissitude of things we get our ideas of cause and effect" (II., 37), a theory which enables Hume to draw all his skeptical conclusions, that we have no idea of cause beyond that of observed antecedence, and no evidence that cause operates beyond our experience. I believe that he is right in drawing our idea of cause from both sensation and reflection, but "that the mind receives its idea of active power clearer from reflection on its own operations than it does from any external sensation." He has some very positive ideas as to the extent and limits of power which he cannot draw from his inlets and capacities. "It is as impossible to conceive that ever bare incogitable matter should produce a thinking, intelligible being, as that nothing should produce something."

This may all be good reasoning, but Locke has nothing on which to found it.

Infinity.—He denies that he has a positive idea of infinity (II., 17). Yet he stands up for its existence. "Man knows that nothing cannot produce a being, therefore there must be something eternal" (IV., 10). The conclusion is right, but he does not prove it. He assures us, on what evidence he does not say, "Wherever the mind places space itself by any thought, either amongst or remote from all bodies, it can in this uniform idea of space nowhere find any bounds, any end; and so must necessarily conclude, it by the very nature and idea of each part of it to be actually infinite" (II., 17). He has some fine glimpses of the truth which we will speak of when we come to consider the idea of God.

Moral Good.—At this point Locke's oversights were first seen in England, which has always been jealous of every thing seeming to bear against morality. These were pointed out by the third Lord Shaftesbury, the grandson

of his friend and patron. Certainly the philosopher's views on this subject are lamentably meagre. He does not get the idea of moral good from reflection; indeed he could not do so according to his theory, as reflection only sees what is already in the mind. He derives it openly and avowedly from sensation. "Things are good or evil only in reference to pleasure or pain; that we call good which is apt to cause or increase pleasure" (II., 20). He makes good not to be a thing in itself, but merely a relation. "Moral good and evil is only the conformity or disagreement of our voluntary actions to some law whereby good and evil is drawn on us from the lawgiver; which good and evil, pleasure and pain attending our observance or breach of the law by the decree of the lawgiver, is that we call reward and punishment" (II., 28). In this he makes morality depend on an arbitrary appointment on a law for which he can bring no defence, and a God whose ways he cannot justify. The moral evil is bad, not in itself, but because there is punishment attached. Whereas, the true statement is that punishment is attached to it because it is evil. Yet he thinks he is able by this unsatisfactory genesis to reach "a natural law," "discoverable by our natural faculties." He reaches the conclusion, "The idea of a Supreme Being infinite in power, goodness, and wisdom, whose workmanship we are, and on whom we depend; and the idea of ourselves as understanding rational beings, being such as are clear to us, would, I suppose, if only considered and pursued, afford such foundations of our duty and rules of action as might place morality among the sciences capable of demonstration; wherein I doubt not but from self-evident propositions, by necessary consequences as incontestable as those in mathematics, the measures of right and wrong might be made out to any one that will apply with the same indifferency and atten-

tion to the one as he does to the other of these sciences" (IV., 3). The language here employed leads me to consider—

The Idea of Necessity.—He is often appealing to a necessity. He speaks of certain and universal knowledge as having "necessary connection," "necessary coexistence," "necessary dependence" (IV., 3). We are able to see how he could reach demonstration, all the propositions in which are seen to be true intuitively; the question is, Could he do it consistently? "In some of our ideas there are certain relations, habitudes and connections, so visibly included in the nature of the ideas themselves, that we cannot conceive them separable from them by any power whatsoever. And in these only we are capable of certain and universal knowledge. Thus the idea of a right-angled triangle necessarily carries within it an equality of its angles to two right angles" (IV. 3). He thinks he has like principles in ethics, and so thinks they are capable of demonstration. All this is apparently after the method of the rational school, and it is not easy to see how he could draw it from his experiential principles. Again we are led to regret that he has not determined for us what is in this reason, with its "certain relations, habitudes and connections." We have yet to consider as illustrating these points—

The Idea of God.—He tells us how we come by this idea: "I think it unavoidable for every considering, rational creature that will but examine his own or any other existence to have the notion of an eternal being who had no beginning" (II., 14). He refers his proof to the faculties. "We are capable of knowing certainly that there is a God, though God has given us no innate ideas of himself, though he has stamped no original characters on our minds wherein we may read his being; yet having furnished us with those faculties our minds are endowed

with, he hath not left himself without a witness, since we have sense, perception, and reason, and cannot want a clear proof of him as long as we carry ourselves about us" (IV., 10). He thinks he can reach in this way: "The eternity of that infinite being which must necessarily have always existed" (II., 114). By a like exercise of the faculties he clothes the Divine Being with his other perfections.

What was needed in Locke's day, what is still needed, is an inductive exposition of all that is comprehended in these faculties, in the intuition and the reason to which Locke is so constantly employing. This was what was attempted by Reid and Kant; but the attempt has to be renewed to reduce the systems to a consistent whole and above all to make them thoroughly conform to the principles of the mind.

SECTION VI.

WAS LOCKE AN IDEALIST?

Certainly no one uses the word "idea" so frequently. I believe that Berkeley drove his theory logically to idealism, yet Locke was undoubtedly a determined realist, believing in the existence of a mind as well as of ideas, and of a body as well as a mind.

He defines idea, "Whatsoever is the object of the understanding when it thinks" (I., 1). It would have been more correct to say that idea is the state of the mind when it thinks of an object. His view is repeated in the fuller definition, "Whatsoever the mind perceives in itself, or is the immediate object of perception, thought, or understanding, that I call an idea" (II., 8). This seems to me clearly to make the object of which a man thinks to be within the mind. The difficulty in which Locke, and all

metaphysicians who agree with him in making the mind percipient only of things within itself, here faces us: how from an idea in the mind can we get something out of the mind by any logical or legitimate process? Already idealism has got an entrance and great difficulty has been experienced in expelling it. It takes its full form and assumes its full significance in the definition of knowledge in Book Fourth, "Since the mind in all its thoughts and reasoning hath no other immediate object but its own ideas, which it alone does and can contemplate, it is evident that our knowledge is only conversant about them" (IV., 1). So he goes on to define knowledge "to be nothing but the perception of the connection and agreement and repugnancy of any of our ideas. In this alone it consists." The common definition of knowledge is the agreement of our ideas with things. But in Locke's account things are left out, and it is difficult to discover how he finds things, or at least things external to the mind. I see no way in which he can logically extricate himself from idealism, which believes only in what is in the mind.

But Locke's good sense made him a very decided realist, in spite of his theory. He has a way in which he reaches a reality out of the mind. "The power to produce any idea in our mind I call quality of the subject wherein that power is. Thus a snow-ball having the power to produce in us the ideas of white, cold, and round, the power to produce those ideas in us as they are in the snow-ball I call qualities;" and then he speaks of primary and secondary qualities (II., 8). But by what logical process can he reach those qualities in body, say of hot, cold, and round? Those qualities, say that of roundness, are not in the idea which is not round. An idea without roundness could never give a notion, much less a knowledge, of roundness; any argument to this effect would be a paralogism

and have more in the conclusion than in the premises. It is clear that Locke is left without any means of consistently reaching roundness, or any other external quality involving extension. The pronounced realist is thus driven by his theory into idealism.

But error, like vice, leads to evil consequences, which may in the end be made the means of correcting it. Logic is as inflexible a disciplinarian as morality. Berkeley, as we shall see, carried out Locke's theory as to ideas to its legitimate conclusion. If we have no direct perception or knowledge of external things, but only of ideas, it was argued, then we can have no proof of the existence of anything but these ideas ; even if there be such gross corporeal things as atoms, molecules, and masses they could not possibly be known by us. There is no need of supposing, certainly not of believing, that there are any such gross bodies really existing ; every end supposed to be produced by them may be accomplished by the ideas. There is left us a grand ideal world, created by God, and forever in the vision of God, who hath given us the power of contemplating it, and so operating upon it as to gather experience, and to act upon it.

This is a beautiful speculation, but it is not consistent with consciousness, which shows us as knowing external objects. As the theory violated our natural convictions, it was necessary that the avenger should come, and he appeared in the *Treatise of Human Nature*, by David Hume (1739). Proceeding on the principle of Locke, carried out by Berkeley, that we do not know things, he showed that we have only impressions, and ideas, the reproductions of them, the latter being fainter than the former.

It was at this point that the Scottish school, with Thomas Reid as the founder, and Dugald Stewart and William Hamilton as its most distinguished disciples, met

the skeptic. Reid tells us that he was carried along by the doctrine till he saw what consequences it produced in the philosophy of Hume, when he was led to draw back and review the whole ideal theory. Reid's own theory was hesitating and uncertain. He talked of sensation *suggesting* a perception, thereby cumbering his doctrine of immediate sense perception. Hamilton corrected this vacillating doctrine by making sense perception direct, but then he unfortunately made all our knowledge relative and not positive. The inquiry needs to be taken up at this point and prosecuted anew.

SECTION VII.

WAS LOCKE A SENSATIONALIST?

Locke's Essay was translated into French at the beginning of the eighteenth century, but was not much known till it (with Newton's *Principia*) was strongly recommended by Voltaire on returning from his visit to England. The French accepted only one half of the philosophy of the Englishman. The Abbé Condillac in his *Traité des Sensations* labored to reduce the original inlets of knowledge to one, and thus founded the sensational school which prevailed in France down to the end of last century, greatly to the debasement of mind and morality. Taking their views from French writers, rather than from Locke himself, the German metaphysicians from and after Leibnitz (who appreciated while he opposed Locke) down to within the last age spoke of Locke as a sensationalist, indeed as the representative sensationalist. But Locke calls in two fountains of knowledge. His language is express: "The other fountain from which experience furnisheth the understanding with ideas is *the perception of the operations of our own*

mind within, as it is employed about the ideas it has got, which operations, when the soul comes to reflect on and consider, do furnish the understanding with another set of ideas which could not be had from the things without, and such are perception, thinking, doubting, believing, reasoning, knowing, willing, and all the different actings of our own mind, which we being conscious of and observing in ourselves do from these receive into our understandings as distinct ideas as we do from the bodies affecting our senses. This source of ideas every man has solely in himself, and though it be not sense as having to do with external objects, yet it is very like it and might be properly called internal sense. But as I call the other sensation, I call this reflection" (II., 1). Condillac argued that as reflection had no innate idea and could not create anything of itself, and as everything in the mind previous to the exercise of reflection was got by the external sense, so all we have after can only be sensations, it may be transformed—they called them *transformes sensations*; but Locke, whether logically or illogically, held that Reflection is a distinct inlet of ideas, higher than those of the bodily senses. The mind gets ideas from material things (how, he cannot very well show, as it does not perceive bodies directly); so it also gets a new kind of ideas from its own actings (this is more easily understood) as it observes them. "The mind furnishes the understanding with ideas of its own operations" (II., 1). Upon these, as we have seen (*supra*, Sec. IV.), he makes the Faculties to work, and thus gets, in a not very satisfactory manner (*supra*, Sec. V.), our higher ideas. Helvetius and the Encyclopedists multiplied *transformed sensations* till they got rid of God and Good; so Locke and his English followers fashioned what we may call *transformed reflections* till they got a sort of rationalistic theology and utilitarian morals which prevailed for several ages. It

thus appears that Locke was not a sensationalist, as he clearly and emphatically makes reflection a source of ideas, and is thus distinguished from Hobbes, from Condillac, the French Encyclopedists and their whole school. British writers have always felt this.

SECTION VIII.

LOCKE WAS AN EXPERIENTIALIST.

While Locke was not a sensationalist, he was an experientialist—to adopt a phrase which has been conveniently coined since his day. It is his avowed doctrine, “Let us then suppose the mind to be, as we say, white paper, void of all characters, without any ideas; how comes it to be furnished? Whence has it all the materials of reason and knowledge? To this I answer in one word, from experience. In that all our knowledge is founded, and from that it ultimately derives itself. Our observation, employed either about external, sensible objects, or the internal operations of our minds, perceived and reflected on by ourselves, is that which supplies our understanding with all the materials of thinking” (II., 1). But the account is not free from ambiguity. Our observation brings us all our knowledge, but from two sources—sensation and reflection, and these are prior to observation. The manufacturer works all his own cloth, but he has to get wool to start with. Not only so, but he has to use machines to weave it. So it is with the understanding, according to Locke’s own theory, when fully expanded. All is from observation, but it is the observation of something within and without, independent of our observation. Then it is by observing faculties, which have functions, and these are not the product of observation. Surely these might be called innate. So far

the maxim requires to be modified and explained. I believe this is what Leibnitz meant when, after allowing that there was nothing in the intellect which was not previously in the senses—always, in Locke's theory, including both the external and internal senses—he adds, *nisi intellectus ipse*.

There is an ambiguity, which has seldom or never been noticed, in the use of the term experience. Sometimes it means a mere individual experience, say the experience of anticipating a cause when we fall in with an effect. In this sense all intuitions, all *a priori* principles, fall within our conscious experience. These individual experiences, it is needless to show, do not constitute a science or a philosophy. But when from a number of individual experiences we rise to a general law, this is a different thing, and this is commonly called experience in speculative philosophy. Locke never seems to have inquired what observations were required to establish a general law. He does not appear to have ever discovered that experiences, however numerous, could not establish a universal law, which must hold good beyond our experience. This subject has had to be discussed since his day by the profound minds of Hume, Kant, and J. S. Mill, and needs still to be cleared up.

SECTION IX.

WAS LOCKE A RATIONALIST?

Locke's philosophy has certainly both a sense side and an intellectual side; both an experiential and a rational element. The former was observed and accepted in France in the last century, and was observed without being accepted in Germany. The latter was the more fondly con-

templated among English-speaking people, both in Great Britain and in the United States. In France his system was driven to sensationalism, and from the time of Kant almost to our day, he was called a sensationalist in Germany. But a very cursory reading of his works shows that Locke was utterly opposed to sensationalism, so far, at least, as it tended to sensualism. His English readers saw this all along.

In religion his spirit and tendency were rationalistic. In his Bible Commentaries, and in all his writings, he treats the Scriptures with profound reverence; but he is not partial to those doctrines which do not commend themselves to human reason. He recognizes the distinction drawn by Abelard and others between propositions contrary to reason and propositions above reason, and is willing to admit the latter when they clearly have the authority of God; but he is opposed to every kind of enthusiasm, extravagance, and mysticism. The Unitarians of last century, who denied the Deity of Christ and the Atonement, were fond of claiming his name and quoting his authority. In philosophic discussion he gives a deep place to intuition as the immediate perception of truth. He allots very important offices to the faculties. He is constantly appealing to reason, both as a discursive process, that is, reasoning, and as "the principle of common reason" (I., 4), and he regards mathematics as demonstrative, and would make ethics the same. During the last age, while the German historians of philosophy were calling him an empiric and a sensationalist, there were British writers who were showing how high the view which he presented of the human understanding, and what great truths he defended, such as Henry Rogers, in his *Essays*; Professor Bowen, in his *Philosophic Discussions*; and Professor Webb, in his *Intellectualism of Locke*.

SECTION X.

THE RELATION OF LOCKE'S THEORY TO THE VARIOUS ASPECTS
OF FIRST TRUTHS.

In the opening of this paper I have called attention to three aspects of primitive or *a priori* principles. I mean to examine the chief modern philosophic systems in the light of these distinctions. It is evident that Locke did not observe the difference between the three aspects.

I. He regards innate ideas mainly as perceptions in consciousness. The original meaning of the word, that is, an image, likeness, or phantasm, always adheres to it in his apprehension. "Ideas being nothing but actual perceptions in the mind, which cease to be anything when there is no perception of them" (II., 10); "having ideas and perception being the same thing" (II., 1). Under this aspect he is right in declaring that they are not innate. They are not in the mind prior to birth or at birth. They rise up as the faculties are exercised. They constitute an individual experience. Not only so, but they cannot transcend the original inlets of knowledge—whatever these may be—certainly most of them may be traced to sensation and reflection as their fountains.

I think that Locke has been obliged to allow, that in the exercise of the faculties, ideas which I regard as new are generated. This being so, there may be perceptions, such as that of time and substance, not derivable directly from sensation and reflection. Now he is right in maintaining that none of these is innate. Herein his criticism is successful, and it has delivered philosophy from a whole host of imaginary entities in the shape of already formed ideas

ready to come forth, on occasions presenting themselves, as writing by invisible ink is when a chemical process is applied to it.

II. The great omission of Locke is in overlooking primitive principles under the second aspect as regulative principles. It was in this light that they were viewed by Aristotle when he called *νόους* the *τόπος εἰδῶν* not *ἐν ἐντελέχεια* but *ἐν δυνάμει*. This was the view taken by Descartes. "While I say that some idea is born with us, or that it is naturally imprinted on our souls, I do not understand that it presents itself always to our thought, for there is no thought it does so, but I understand that we have in ourselves the faculty to produce it. It was at this point that Locke was corrected by Leibnitz, when he added *nisi ipse intellectus*; maintaining that the intellect is innate though the actual ideas or perceptions are not, and that the innate principles" are in us before we perceive them (*Nouv.-Essais*, II., 1). Herein, too, Locke was improved by Kant, who places in the mind *a priori* principles, ready to be imposed on the objects of possible experience. Herein, too, Reid noticed the same truth, when he called in the principles of common sense, and Stewart, when he called them fundamental laws of belief. But whatever defects there may be in Locke's philosophy, he is ready to express the facts, whether they are reconcilable with his theory or not. His beliefs and his expressions are often sounder than his system. His honesty leads him to make statements which seem to be fatal to his favorite opinions. In answering Mr. Lowde, he says of supposed innate notions: "Before they are known there is nothing of them in the mind but a capacity to know them when the concurrence of those circumstances, which this ingenious author thinks necessary in order to the souls exerting them, brings them into our knowledge" (II., 28, *foot-note*).

III. We have seen that our intuitive perceptions may be generalized, when they become axioms or maxims. So far as they are not correctly drawn from the singular exercises they may be a source of error, widening like the darkness of an eclipse. It has to be added that from their subtle character, and from their being mixed up with other and empirical operations of the mind, there is very apt to be inaccuracies in the expression of them, breeding the confusion and controversies which are so apt to appear in metaphysics. But so far as they are correctly generalized they are as certain as our primitive perceptions, which are founded on the regulative principles of the mind, which have the sanction of our constitution and the authority of the God who gave us our constitution. How does Locke's philosophy stand toward them?

Conclusion First, he is altogether right in saying that under this aspect primary truths are not innate. Locke is again successful here, and in consequence has carried with him on the general question multitudes who do not see that this is not the whole question, who do not see that there may be in the mind innate faculties with their laws, while there are no innate general axioms. Locke's favorite example in his First Book of a supposed innate principle is that "it is impossible for the same thing to be and not to be at the same time." He shows successfully that children and savages, in whom we might expect it if it is native, have no such conscious principle, and that they would not understand it if presented to them. "Such kind of general propositions are seldom mentioned in the huts of Indians, much less are they found in the thoughts of children or any impressions of them on the minds of naturals" (II., 3).

Secondly, he sees that these general propositions are derived from particular instances. "It is certain that not all, but only sagacious heads light at first on these observa-

tions and reduce them into general propositions, not innate, but collected from a preceding acquaintance and reflection on particular instances" (I., 2).

Thirdly, he does not see what they are generalizations of. They are not generalizations of external facts, like those of natural history or astronomy. They are generalizations of our primitive perceptions which grow out of the innate and constituent principles of the mind. On noticing a thing at a certain place we decide that it cannot be that this thing has passed out of existence, and we perceive that we would so decide in every like case, and generalizing our judgments, we declare that it is impossible for the same thing to be and not to be at the same time. This is not like the ordinary laws of nature discovered by induction, say the law of gravitation, which may or may not hold true in all worlds, but is true universally, and seen to be so by a necessity of thought.

Locke is further right when he says that these maxims do not furnish evidence of the particular instance. "The consideration of these axioms can add nothing to the evidence or certainty of its knowledge" (IV., 7). The truth is the evidence to us of the general depends on the particular, and not the evidence of the particular upon the general. "If one of these have need to be confirmed to him by the other, the general has more need to be let into his mind by the particular than the particular by the general. For in particulars our knowledge begins and so spreads itself by degrees to generals" (IV., 7). When I see the stick *A* of the same length as the stick *B*, which is again of the same length as the stick *C*; I judge and decide at once that *A* is of the same length as *C*, without getting any assurance from the axiom, that "things which are equal to the same thing are equal to one another."

He sees that the generalized maxims serve some good

purpose. "They are of use in the ordinary methods of teaching science as far as they are advanced." "They are of use in disputes for the silencing of obstinate wranglers and bringing those contests to some conclusion" (IV., 7). But why or how they should do so, unless they have authority? and whence their authority except from our nature and constitution, which are certainly innate? What is thus brought before us enables us to answer a plausible objection by Locke which has led some to discard innate principles. "Not only those few propositions which have had the credit of maxims are self-evident, but a great many, even almost an infinite number of other propositions are such," and he gives as examples that two and two are four, and that yellow is not blue. I am sure that the number of such propositions is almost infinite. They are pronounced upon our cognition of individual things. These propositions are all singular. But we are at the trouble to generalize only a few of them into maxims, such as the axioms of Euclid and of rational mechanics and generally metaphysical principles. Locke was tempted by his aversion to innate ideas of every kind to set too little value on these fundamental principles. Being put in the form of laws, which all science requires to be, they are the connecting links of many of the sciences, as for instance of the sciences of quantity, of energy, of logic—where we have the dictum of Aristotle, and of ethics, which assumes that wrong differs from right.

SECTION XI.

THE MIND LOOKS AT THINGS THROUGH IDEAS.

In this review I have sought so far as possible to enter into the very thoughts of the author, and this even when I do not agree with them. I have labored to look at things from his point of view before venturing to criticise him. In most of his tenets which have been controverted since his time I partly agree and partly disagree with him. As a truly honest inquirer he had commonly a large amount of truth in his doctrines ; but I have been obliged to point out incorporated errors, commonly originating in his adherence to a favorite theory. Every one has noticed the apparent inconsistencies in his statements ; I believe they arise from his discovering at times and acknowledging truths which cannot be reconciled with his general doctrine.

It is clear that he represents the mind as not directly perceiving things out of itself. " 'Tis evident the mind knows not things immediately, but only by the intervention of the ideas it has of them " (IV., 4). His philosophy proceeds throughout on this principle. The object of the understanding when it thinks is an idea. The mind has intuitive knowledge, but it consists in the perception of the immediate agreement or disagreement of two ideas. Knowledge in general is the perception of the agreement or repugnance of ideas. Judging from these expressions it looks as if the mind, even in perceiving by reflection its own states, does so by the intervention of the ideas it has of them. I have difficulty in believing that he meant

this, but his language carries this with it. We see how necessary it is, if we would get at the exact truth, to abandon the whole ideal theory of Locke and to return to the natural theory that we at once perceive things.

It appears to me that Locke very much identified ideas and things. He is not very well able to say how from ideas in the mind we reach things without the mind. The truth is, the question of the legitimacy or illegitimacy of arguing from things internal to things external was not expressly started at that time. He seems, at times at least, to proceed on the principle of causation; we have an idea in the mind and see that there is no cause within the mind and we argue a cause without the mind. But this proceeds on the necessary law of cause and effect, which is not justified by his experiential theory. It is supposed that we argue from an idea to an external object believed to be extended. But there is no extension in the idea, and we cannot logically argue from an unextended effect to an extended object, for this would place in the conclusion an entirely new object not in the premise. He regards the primary ideas of bodies as *resemblances* of the ideas, but how can he know that they are so unless he has known both and compared them? Altogether it is clear to me that Locke left this whole subject of the relation of the objective external state to the subjective idea in an uncertain state. Since his day it has passed through the idealism of Berkeley and the skepticism of Hume; Reid and Hamilton have sought to bring it back to a natural realism, while Kant, and of a later date Spencer, have introduced each of them new and important elements. We still need to have the subject cleared up; and this I am convinced will be done sooner or later, though it will be a difficult work. A statement with a critical examination of the opinions of the great thinkers now

named, and a judicious criticism, may help to secure this end.

Meanwhile we have an important principle held by Locke, which has been overlooked by others, and which, as it appears to me, ought to be brought into prominence in the present state of the discussion. He has no very satisfactory way of reaching things, but when he reaches them he holds that our perceptions, our faculties generally, our intuitions, our reason, all look to things. Kant, in this respect, instead of advancing beyond Locke, has fallen behind him. The German philosopher did improve upon the English one when he showed that there were in the mind *a priori* principles anterior to experience. But then he made these, not perceptions of things, but forms imposed upon our perceptions of objects, adding to them and modifying them. In this respect he has been followed by Hamilton. It is time to repudiate this Kantian doctrine and return to the natural system which makes our primitive perceptions contemplate things. Locke meant to hold this system: "Had they examined the ways whereby men come to the knowledge of many universal truths they would have found them to result in the minds of men *from the being of things themselves* when duly considered" (I., 4).

SECTION XII.

GENERAL REVIEW OF LOCKE'S PHILOSOPHY.

I. We see what he denies: all innate ideas. Under this he asserts that there is nothing in the mind at its birth; it is a sheet of white paper. In attacking the views that were commonly entertained in his day he did philosophy much service. He was successful in showing that the

mind was not born with a set of ideas, in the sense of perceptions actually formed or ready to come forth on occasion. He was evidently right in holding that the mind has not an original repository of abstract and general notions, such as those of space, of time, of infinity, and moral good. He showed that all general notions and maxims were formed out of particular instances by the exercise of the faculties.

On the other hand he carried his negations too far. Even a sheet of paper, though it has no characters, has properties without which there could be no writing on it. So it is with the mind; it has certain powers which are native, which, indeed, might be called innate. These powers have rules and limits; they can do certain work; in short, they are laws or principles. A *tabula rasa*, or blank paper, is not the fittest emblem of them. Leibnitz has a better. It is not, he says, merely like bare marble; it is like marble with veins in it, fitting it to become a statue, say of Hercules. It has "inclinations, dispositions, habitudes, and natural virtualities" (*Nouv.-Ess.*, Pref.). Locke, as we have seen, is obliged constantly to appeal to judgments which the mind pronounces at once, and which are necessary. These show that there are innate regulating principles in the mind, supporting and guaranteeing great truths.

II. Locke has two grand inlets of knowledge—sensation and reflection. But he has also faculties operating upon these, such as perception, discernment, comparison, composition, abstraction. These actually form our ideas. Locke has not been able to state very clearly the relation between these inlets and the faculties. What, for instance, is the difference between sensation as an inlet, and perception as directed to the ideas supposed to be introduced by sensation? Do they not, in fact, perform the same func-

tion, namely, give us a knowledge of bodily objects? It has been shown above that the faculties in their exercise give us new ideas, such as those of time and moral good, which cannot be had from either sensation or reflection, or from the two combined. It is clear that in a correct philosophy the inlets and the faculties should not be separated—they should be combined; and the faculties should be so unfolded and determined as to settle for us—what Locke was so anxious to do—the boundaries of our intellectual vision, and let every man “know the length of his tether.”

III. No man has seen more clearly than Locke that our primitive perceptions are all individual. We perceive of these two straight lines that they cannot enclose a space; that the shortest distance between these two points is a straight line. Locke also sees that our general maxims are formed out of these particular instances, but he does not see precisely how this is done. In fact it is accomplished by the generalization of the singular exercises. We perceive of these two straight lines that they cannot enclose a space, and we discover that we would say the same of every other two lines, and so reach the general truth. Locke acknowledges that these generalized maxims serve some useful purposes, particularly in settling forever some disputed points. But he does not see how they accomplish such ends. It is because, when properly generalized, they are the expression of the constitutional principles of the mind, looking at things, and pronouncing a judgment as to what is involved in things.

IV. Locke had great difficulty in reaching realities. The mind perceived, and retained, and compared only ideas, and he had no legitimate way of arguing from these ideas in the mind any external things. His theory seemed to imply that the mind itself was only perceived by ideas

coming in by reflection. But Locke was in fact a determined realist, believing in both mind and body, and that he knew things. Thus he made all our primitive perceptions, all our intuitions, our knowledge, and our common reason to look at things and all judgments to be pronounced about things.

NOTICE OF BERKELEY.

GEORGE BERKELEY was born March 12, 1685, in the vale of the Nore, near Thomastown, in County Kilkenny, in the south of Ireland. In 1700 he entered Trinity College, Dublin, where his favorite studies were mathematics and metaphysics. He began while there *A Commonplace Book*, in which we see as in a glass the rise and development of the new views which rose up in his mind. He became tutor in the family of Dr. William Molyneux, a great admirer of Locke, and was introduced to the *Essay on Human Understanding*, which had become famous. The other philosophical writers studied by him seem to have been Descartes, Hobbes, Malebranche, and he must have known the works of Peter Brown, Provost of Trinity College, and of King, Archbishop of Dublin. In 1709 he published his *Essay toward a new Theory of Vision*, in which he showed that the eye is not immediately percipient of distance. He afterward lived for some time in England, where he became acquainted with such men as Samuel Clarke, Addison, Steele, Swift, and Arbuthnot, and took a tour on the continent of Europe. He returned to Ireland in 1721, and became Dean of Derry in 1724. He was now seized with an impulse to set up a university in Bermuda to Christianize the Indians, and

persuaded the government to favor his scheme and a number of influential people to subscribe funds. In prosecution of this scheme he sailed for America, and landed at Newport, in Rhode Island, in 1729. He lived for some years in a house in the neighborhood still standing, and was a favorite with those who came in contact with him ; but not being able to carry out his Bermuda purpose he returned to his own country and was made Bishop of Cloyne. At this period of his life he strongly recommended the virtues of tar-water, which he mixes up with his philosophic theories. In his declining life he retired to Oxford and became enamored with the Platonic philosophy, toward which he had always been tending, even when he was under the influence of Locke. He died in 1753.

It is not very difficult to estimate the intellectual calibre and the character of Berkeley. From an early date he was addicted to dreamy reflection. "I was distrustful at eight years old, and consequently by nature disposed for these new doctrines." In gazing so intently into the spiritual world the material covering was lost sight of.⁴ He was possessed of great acuteness and ingenuity, but was not distinguished for good sense or shrewdness. The fact is, Berkeley was a visionary in everything. His Bermuda project and his belief in tar-water were not wilder than his philosophy. It is amusing meanwhile to observe how he claimed to be so practical. He convinced British statesmen of great shrewdness, by an array of calculations, that the best way of converting the Indians and of Christianizing the continent of America was by a college instituted at Bermuda. By an undiscerning agglomeration of facts he convinced numbers in his own day, and he has had believers in Ireland almost to our day, that tar-water could cure all manner of diseases. In like way he persuaded himself that his philosophy is the expression of

vulgar belief and the perfection of common-sense. He professes "to be eternally banishing metaphysics and recalling men to common-sense," "to remove the mist and veil of words," and to be "more for reality than other philosophers."

His style is acknowledged, on all hands, to be graceful and attractive. He avoids, as Locke does, all scholastic and technical phrases. As Locke affected the style of the conversation which he had heard among the upper classes, so Berkeley adopted the style of the literature of his day, that is, of the wits of Queen Anne. This mode of composition has its disadvantages. If it has the ease of conversation and literature, it has also the looseness. Berkeley confesses that he is by no means very precise in his use of language: "Blame me not if I use my words sometimes in some latitude; this is what cannot be helped. It is the fault of language that you cannot always apprehend the clear and determinate meaning of my words." His editor complains of "the chronic tendency to misconceive" Berkeley's philosophy. His admirers are ever telling us that he has been misunderstood, and in particular that his opponents of the Scottish school, such as Baxter, Reid, Beattie, and Stewart, do not apprehend his meaning. His opponents are apt to feel, if not to say, that his speculations are so undefined that any one may form the shape that suits him out of the cloud. Those attacking him suppose that he denies the existence of matter; those defending him maintain that he holds resolutely by the existence of matter. But surely there is some defect in a philosophic writer who has so expounded his doctrine that it is forever misunderstood by able and candid minds. With all these imperfections we feel that some of his works, such, for instance, as *Three Dialogues between Phylas and Philonous*, are the finest philosophic dialogues in the

English tongue, and are worthy of being placed alongside those of Plato.¹

I am now to examine the chief points in his philosophy, so far as they relate to Locke, who preceded him, and to Hume, who professed to carry out his principles.

Theory of Vision.—Berkeley is best known in connection with this theory, which he expounded in his *Essay toward a New Theory of Vision* (1709) and defended in his *Theory of Vision Vindicated and Explained* (1733), and, indeed, in most of his works. Professor Fraser is of the opinion that in respect of his theory he has not so much originality as is commonly attributed to him. “He takes the invisibility of distance in the line of sight for granted as a common scientific truth of the time.” It is well known that there were notices by Descartes of the way by which the eye perceives distances, and Malebranche specifies some of the signs by which distance is estimated. William Molyneux, in a treatise on optics, published in 1690, declared that distance of itself is not to be perceived, for “’tis a line or a length presented to the eye with its end toward us, which must therefore be only a point and that is invisible” (I., 17); and then he shows that distance is chiefly perceived by means of interjacent objects, by the estimate we make of the comparative magnitude of bodies or their faint colors: this for objects considerably remote; as to nigh objects their distance is perceived by the turn of the eyes or the angle of the optic axis. Locke, in the fourth edition of his *Essay*, mentions a problem put to him by Molyneux, whether, if a cube and a sphere were placed before a blind man who was made to see, he would be able

¹ The standard edition of Berkeley's works is *The Works of George Berkeley, D.D.*, 4 vols., by Professor Alexander Campbell Fraser. See, by the same author, *Selections from Berkeley and Berkeley*, in the “Philosophic Classics.”

to tell which is the globe and which the cube, to which both Molyneux and Locke answered "not." These statements by well-known philosophers were known to all interested in such studies before Berkeley's work appeared. But the *New Theory of Vision* treated of the subject specially and in a more elaborate way, and has commonly got the credit, not certainly of originating the doctrine, but of establishing it: Professor Fraser has shown that Berkeley all along meant his views as to vision to establish a far more important principle, that by all the senses we perceive only signs of mental realities, a doctrine cherished by him from an early date, but kept in the background in his early work.

Idea.—Berkeley takes the word not in the sense of Plato or the schoolmen, but in that of Descartes and Locke, specially the latter. The literal meaning always stuck to it in Locke's apprehension, and breeds inextricable confusion. He habitually regards the object of the mind when it thinks as an idea in the sense of image. He supposes there is such an image when we use the senses, even such senses as smelling and hearing, and he seeks for such an image when we think of space, time, and eternity. He sees the difficulty in the mind forming an idea—in this sense—of the product of abstraction and generalization. He acknowledges that it doth "require some pains and skill to form this general idea of a triangle," "for it must be neither oblique nor rectangle, neither equilateral, equicrural, nor scalenum, but all and none of these at once. In effect it is somewhat imperfect that cannot exist; an idea wherein some parts of several different and inconsistent ideas are put together." Upon this Berkeley remarks: "After reiterated efforts and pangs of thought to apprehend the general idea of a triangle, I have found it altogether incomprehensible" (I., 146). "The idea of a man

that I frame to myself, must be either of a white, or a black, or a tawny, or a straight, or a crooked, a tall or a low, or a middle-sized man" (I., 142). Here, as in so many other cases, he has sharpness enough to detect the errors of the prevailing philosophy, but not clearness or comprehension enough to set it right. He would use the word as Locke had done: "I take the word idea for any of the immediate objects of sense or understanding" (I., 55). But then this object is an image: "By idea I mean any sensible or imaginable thing" (IV., 457). "Properly speaking it is the picture of the imagination's making. This is the likeness of and referred to the real idea or (if you will) thing" (445). He rejects, as I believe he ought, abstract ideas in the sense of Locke, that is, in the sense of images of qualities; and he claims it as his merit that he gets rid in this way of those grand abstractions, such as matter and substance, existence and extension, space and time, to which philosophers have given an independent being, and set up as rivals to Deity. But while he has exposed the errors of Locke, he has not established the positive truth. It turned out that David Hume, taking advantage of his doctrine, undermined, by a like process, the separate existence of personal identity and power, of mind and morality.

Abstract and General Ideas.—His defective views on this subject perplexes his whole philosophy. He takes credit for removing abstractions out of speculation that we may contemplate realities. And it is quite true that we cannot form an abstract idea in the sense of likeness or phantasm. We cannot form in the mind an image of whiteness as we do of a lily, of redness as we do of a rose, of humanity as we do of man. We have to bring in here the distinction known to Aristotle, between *phantasm* (image) and *noema* (notion). An abstract is not a *phan-*

tasm, an exercise of the mere reproductive, recalling or imaging power of the mind; but a *notion*, the product of the elaborative or discursive—of the comparative powers, in fact—specially of the power which perceives the relation of part and whole, of an attribute to that concrete object of which it is an attribute. Having seen a lily I can ever afterward image the lily—this is the phantasm of Aristotle. But I can exercise another mental operation regarding it, and the product is the noema of Aristotle: I can consider its whiteness and not its shape or size, and when I do so I have an abstract notion about which I can pronounce judgments and reason. On rare occasions Berkeley had a glimpse of what is involved in abstraction, as in his *Principles of Human Knowledge*: “And here it must be acknowledged that a man may consider a figure merely as triangular without attending to the particular qualities of the angles or relations of the sides. So far he may abstract; but this will never prove that he can frame an abstract general inconsistent idea [in the sense of image] of a triangle. In like manner we may consider Peter so far forth as man, so far forth as animal, without framing the forementioned abstract idea [image], either of man or animal; inasmuch as all that is perceived is not considered” (I., 148). He says that “there is a great difference between considering length without breadth, and having an idea or of imagining length without breadth.” Speaking of the qualities abstracted he acknowledges that “it is not difficult to form general propositions and reasonings about these qualities without mentioning any other” (I., 284). Had he taken as much pains in unfolding what is contained in “considering” a figure as triangular, and Peter as man, without considering other qualities and what is involved in “forming general propositions and reasonings about qualities,” as he has taken to expel abstract

ideas in the sense of phantasms, he would have saved his own philosophy, and philosophy generally from his day to this, from an immense conglomeration of confusion.

Much the same may be said of the General Idea, which Locke confounded with the Abstract Idea, under the phrase abstract general idea. These two evidently differ. An abstract notion is the notion of an attribute, a general notion is a notion of objects possessing a common attribute, or common attributes. We cannot form, in the sense of likeness, a general idea. An image, as Berkeley saw, must always be singular, whereas a general notion, the notion of a class, must embrace an indefinite number of individuals, all that possess the quality or qualities which bring the objects into a class. There can be no phantasm formed of the individuals in the class, which are innumerable, nor of the attributes, which are abstracts. At times he had a glimpse of what is implied in a general idea, but he does not pursue it, and he speedily loses sight of it. "Now, if we will annex a meaning to our words, and speak only of what we can conceive, I believe we shall acknowledge that an idea, which considered in itself is particular, becomes general by being made to represent or stand for all other particular ideas of the same sort" (I., 145). But what constitutes the *sort* and the same *sort*? Had he proceeded to answer this question he might have found the exact truth. A sort is composed of things assorted, and assorted because possessing a quality or qualities in common, and must embrace all the objects possessing the quality or qualities. In looking at the things thus assorted, we see that the affirmations we make apply to all and each of the objects of the class, so that when a geometrician draws a black line of an inch in length, "this, which is in itself a particular line, is nevertheless, in regard to its signification, general, since, as it is there used, it represents all particu-

lar lines whatsoever, so that what is demonstrated of it is demonstrated of all lines, in other words, of a line in general" (*ib.*). This is the general idea I stand up for, and I hold that it, and the abstract idea as above described, may be made the object of the understanding when it thinks, and that we can pronounce judgments upon it, and reason about it. This is, in fact, what we do in mathematics and in all the sciences.

While he set himself in an indiscriminating manner against abstract general ideas, Berkeley was not, as he has been commonly represented, a nominalist. His aim was to carry us away both from abstracts and names to individual things. According to him "ideas become general by a particular idea standing for all the ideas of the sort," and so, "certainly it is not impossible but a man may arrive at the knowledge of all real truth as well without as with signs, had he a memory and imagination more strong and capacious," and therefore "reasoning and science doth not altogether depend on word or names" (IV., 467).

Existence.—In every intelligent exercise we know ourselves as existing in a particular state, say thinking or willing. Our knowledge of ourselves and the particular state, say thinking, are mixed up, but we can so separate them as to consider ourselves as existing. This does not show that our existence depends on our perception. We perceive ourselves to exist because we already exist. So far as external objects are concerned, we perceive them by the eye as extended and colored, but we can, if we choose, consider them as existing apart from the color, apart even from our perception of them. Of course our perception is implied in our perceiving them; but this does not prove that our perception is necessary to their existence. In fact we perceive them because they exist. Unwilling to admit abstractions of any kind, Berkeley argued that the objects

could not exist apart from the perception ; hence his maxim, *esse est percipi*. I admit that a thing perceived must exist ; but this does not imply, according to the rules of logic, the converse proposition, that a thing in order to exist must be perceived. I allow *percipi est esse*, but not *esse est percipi*. There were rocks deposited in our earth before there was a man to perceive them. We may believe that at this moment there are flowers in forests which have never been trod by human foot. The external thing, be it matter or be it idea, must exist in order to my perceiving it—it is *esse* before it is *percipi*.

But then he explains that he does not mean that in order to the existence of a thing it must be perceived by the individual, it may be perceived by other finite beings, it must be perceived by God. But this admission implies that in order to its existence it is not necessary that we should perceive it ; in other words, the thing may exist independent of our perception of it. “I will grant you that extension, color, etc., may be said to be without the mind in a double respect ; that is, independent of our will and distinct from the mind ” (IV., 667). And if it exist independent of our perception it may exist independent of the perception of other created beings. There is nothing, then, in the nature of our perception, considered in itself, implying that the existence of the object implies perception. Berkeley speaks as if the existence of a thing independent of mind is meaningless and contradictory ; is repugnant, as he expresses it. But surely I can conceive of a thing as existing out of and independent of the mind perceiving it, and if there be evidence I can believe it to exist. True, if I believe it to exist on reasonable ground, I must have perceived it myself, or have the testimony of some one who has perceived it. But then I can conceive it to exist whether I have perceived it or no ; whether, in-

deed, I believe in its existence or no. In all this there is nothing self-repugnant. "But, then, to a Christian, it cannot surely be shocking to say that the real tree existing without his mind is truly known and comprehended by (that it exists in) the infinite mind of God" (I., 330). That everything is known to God and comprehended by his infinite mind will be admitted by all Christians, by all who believe in an omniscient God. But, then, this does not follow from the nature of perception, but from our belief derived otherwise of the guardian care of God, a belief most readily obtained when we acknowledge the reality of external objects. Observe how dextrously he slides from one meaning of comprehension, from the meaning "embraced in the understanding," to "exist in," which is an entirely different thing. I comprehend the deed of a son murdering his father, but this does not make the deed exist in me. Not only so, but I hold it to be in every way most reverent, not to speak of that deed of murder as existing in the mind of the good God. Berkeley often writes as if it were not possible for God to make a thing, having an existence out of himself, with any power in itself. This, surely, is a limitation of the divine power by no means very reverential. Believing the plunging of the knife into the bosom of the murdered man to exist out of me, I believe it to be most becoming to represent it as also existing out of God.

He is greatly alarmed for the consequences which might follow, provided it is admitted that there can be existence independent of perception. "Opinion that existence was distinct from perception of horrible consequence. It is the foundation of Hobbes' doctrine" (IV., 459). But fact and truth never lead to evil consequences, which errors, even well-meant errors, commonly do. The good bishop never dreamed that his favorite principle would furnish a

starting-point to Hume. I have noticed passages in Berkeley which look as if they might have suggested the basis of Hume's skeptical theory. Hume opens his *Treatise of Human Nature*: "All the perceptions of the human mind resolve themselves into two distinct kinds, which I call *impressions* and *ideas*. The difference betwixt these consists in the degrees of force and liveliness with which they strike upon the mind and make their way into our thought or consciousness. Those perceptions which enter with most force and violence we may name *impressions*; and under this name I comprehend all our sensations, passions, and convictions as they make their first appearance in the soul. By *ideas*, I mean the faint images of these in thinking and reasoning." Might not the whole doctrine, and the language employed, and the distinction drawn, have risen up in his shrewd, unsatisfied mind as he read at the close of a long discussion in the *Principles*: "What do we perceive besides our ideas and sensations?" (I., 157). He specifies the very distinction between the two, the one more lively, the other more faint. "The ideas of sense are more strong, lively, and distinct than those of imagination" (170). "The ideas imprinted in the senses by the author of nature are called real things, and those excited in the imagination being less regular, vivid, and constant are more commonly termed ideas" (172). Hume thus got his very phraseology, *impressions* (from *imprinted*) and *ideas*, and the distinction between the two, as lying in the difference of force or strength, liveliness or distinctness. Hume accepted the bishop's doctrine and drove it logically to a conclusion which did not admit of an argument for the existence of a God to uphold these impressions or sensations and ideas.

Matter.—The whole philosophy of Locke proceeds on the supposition that we perceive only ideas. His theory

of knowledge is a movement in a circle. An idea is the object we perceive; the object we perceive is an idea. This idea was regarded by him as an image of an object out of the mind which it resembles and represents. But it was perceived at an early date that he had and could have no proof of this, indeed no proof of the existence of matter. Man can take no immediate cognizance of matter; and logic will not allow us from a mere idea in the mind to argue the existence of something beyond the mind. This was the condition of speculative philosophy in Great Britain when Berkeley thought out his ingenious theory. He saw it to be very unsatisfactory, if the mind can perceive nothing but the idea, to argue that there must be a material object of which it is a copy. So he boldly declared we are not required to believe in anything but the idea. All that we perceive is the idea. We have no proof of the existence of anything else. If there be anything else it must be unknown. Every purpose that could be served by this supposed external thing may be accomplished by the idea. "If, therefore, it were possible for bodies to exist without the mind, yet to hold they do so must be a very precarious opinion, since it is to suppose, without any reason at all, that God has created innumerable beings that are utterly useless and serve no manner of purpose. In short, if there were external bodies, it is impossible we should ever come to know it; and, if it were not, we might have the very same reason to think that there were that we have now" (I., 165). Berkeley thus started what Hamilton would call a presentation theory of sense-perception; that is, that the mind looked directly on the object, the object with him, however, being the idea with nothing beyond. Reid followed: discovering that Locke could never reach the existence of matter by a process of reasoning, he insisted that the existence of matter

was suggested by instinct, intuition, or common-sense, there being first a sensation, this instinctively raising a perception of an external thing. Hamilton took a bolder and a more direct course than Reid: discarding, as Reid had done, the idea of Locke and of Berkeley; and discarding, too, the *suggestion* of Reid, he asserted that we look directly on matter, are immediately conscious of matter. Hamilton, like Berkeley, is a presentationist; but Berkeley says that the object before the mind is an idea, whereas Hamilton says it is a material object possessing extension.

At this point it is of all things the most important to determine in what sense Berkeley admits, and in what sense he denies, the existence of matter. He is ever asserting, and asserting in strong language, that he believes in the existence of bodies. Yet he speaks constantly of his aim being to expel matter from the universe: "Were it necessary to add any further proof against the existence of matter" (I., 16 and *passim*). But he is a firm upholder of the existence, not of abstract matter, but of individual bodies: "I do not argue against the existence of any one thing that we can apprehend, either by sense or reflection. That the things I see with my eyes and touch with my hands do exist, really exist, I make not the least question. The only thing whose existence we do deny is that which philosophers call matter or corporeal substance." In the interests of religion he is tremulously afraid of allowing the existence of matter as a substance. "Matter once allowed, I defy any man to prove that God is not matter" (IV., 442); as if matter did not, like mind, supply evidence of the existence of its maker and disposer. He is for expelling the substance, matter, to which some were attributing an existence independent of God; but infidels in our day are quite ready to make a like use of matter con-

sidered as a mere phenomenon: they argue that it does not need a God to support it. He is right, so I think, in maintaining that in regard to body we should not be required to believe in more than we can perceive by the senses, more than we see, and feel, and taste, and smell, and hear. But then we perceive by the senses much more than he is disposed to allow. He means by idea "any sensible or imaginable thing." An idea must be in the mind, so he argues that the whole, perception and thing perceived, must be in the mind. "The tree or house, therefore, which you think of is conceived by you." "What is conceived is surely in the mind" (I., 291, 292). "Nothing properly but persons, *i.e.*, conscious things, do exist. All other things are not so much existences, as manners of the existence of persons;" on which Professor Fraser asks, "Is an extended thing a mode in which a person exists?" (IV., 469). He showed in his *New Theory of Vision* that color is in the mind, and then, in his *Principles* and later works, that extension, as an idea, must also be in the mind. Professor Fraser thus expounds him, I believe fairly: "When we do our utmost by imagination to conceive bodies existing externally or absolutely, we are, in the very act of doing so, making them ideas, not of sense indeed, but of imagination. The supposition itself of their individual existence, makes them ideas, inasmuch as it makes them imaginary objects, dependent on an imagining mind" (I., 123). Still he stands up for the reality of body: "The table I write on I say exists, that I see and feel it, and if it were out of my study I should say it existed, meaning thereby, that if I was in my study I might perceive it, or that some other spirit does actually perceive it" (I., 157). This is the very theory which, passing through Hume and James Mill, has been elaborated by John Stuart Mill into the doctrine of matter

being the "possibility of sensations." Every man of ordinary sense on first hearing this doctrine will be inclined to say, there must surely be some mistake, some confusion here, and this whether he is able to point it out or not. The misconceptions, I believe, are to be rectified by an inductive inquiry into what the senses really reveal. Looking simply to the testimony of our senses they make known something out of us and independent of us. In particular we know body as extended, we see it as extended in two dimensions, we feel it as with three dimensions. No doubt there is perception in all this, but perception is not extended in any sense, in one, two, or three dimensions. We perceive it as something different from our perception, and we perceive it as having something not in our perception, we perceive it, in short, as extended. This is an intuition carrying within itself its own evidence. As being self-evident it can stand the test of contradiction: we cannot believe the opposite; we cannot be made to believe that the table before me has not length and breadth. It is also catholic or universal, as being in all men. Just as by the internal sense we know mind, so by the external senses we know matter. The evidence for the existence of the one is much the same as the evidence for the existence of the other. We cannot allow the one to set aside the other. We must accept both, and I defy any one to show that there is any repugnancy between them.

Extension perceived by Sight and Touch.—He puzzles himself and puzzles his editor greatly by his favorite maxim, that we do not see the same extension by the eye and by the touch. "The objects of sight and touch are two distinct things" (I., 56). Professor Fraser seems to go further, "colored extension is antithetical to felt extension." The perplexity arises from not observing precisely what we do perceive by means of these two senses. By

the eye we do not perceive abstract extension, but an extended thing. It is the same with touch, we do not perceive mere extension, we perceive an extended thing. By a subsequent act of comparison, we may discover the two, the extended table seen and touched, to be the same thing. Surely there is no antithesis here, any more than there is between seeing first one side of a building, and then another side, between seeing the one side of a shield red, and the other black. By each of the senses we get a certain amount of information, which we combine in the one thing, which we discover to have extension, discovered both by the eye and by touch. Certainly the knowledge given by the touch in our ordinary apprehension of sensible objects mingles with that given by the eye, and indeed with that given by all the senses, and we superadd to all these the inferences which we have drawn. To intuitive perception by the eye a mountain is but a colored surface with a definite outline; but we combine in it all that we have known about mountains by touch and a gathered experience, that green is grass, that other green is a tree, that brown is a scar, and that sharp outline a precipice. There is no contradiction in all this.

Substance.—It is not to be wondered at that Berkeley should have been dissatisfied with Locke's doctrine on this subject. Locke denies very strongly and emphatically that he sets aside substance, and he is very angry at his opponent, Stillingfleet, when he says that he does so. He believes in substance; but then it can be made known neither by sensation nor reflection, and so it comes in very awkwardly in a system which acknowledges no other inlets of knowledge than these two. It is the unknown substratum or support of what is known. Berkeley did great service to philosophy by removing these crutches supposed to help, but really hindering, our conviction as to the

reality of things. "Say you there might be a thinking substance—something unknown which perceives and supports and ties together the ideas. Say, make it appear that there is need of it, and you shall have it for me; I care not to take away anything I can see the least reason to think should exist" (IV., 443). I have always regretted that Reid and the Scottish school, in discarding the "idea" of Locke as coming between the thing perceived and perception, did not also abandon the "substance" of Locke as being equally useless and cumbersome. Berkeley seems to me to be farther and pre-eminently right when he maintains, in regard to matter, that we are to believe only in what is made known by the senses. "That the things I see with my eyes and touch with my hands do exist, really exist, I make not the least question. The only thing whose existence we deny is that which philosophers call matter or corporeal substance. And in doing of this there is no damage to the rest of mankind, who, I dare say, will never miss it. The atheist, indeed, will want the color of an empty name to support his impiety; and the philosophers may possibly find that they have lost a great handle for trifling and disputation" (I., 173). I am glad to find him saying farther, as if he had a reference to a mode of speaking in our day: "The philosophers talk much of a distinction betwixt absolute and relative things, considered in their own nature, and the same things considered with respect to us. I know not what they mean by 'things considered in themselves.' This is nonsense, jargon." I have, however, endeavored to show that Berkeley did not discover all that is involved in perception by the senses.

But is Matter a Substance? The answer to this question must depend on the definition which we give of substance. There is a sense, and this I believe the proper

sense, in which both mind and matter are substances. It can be shown of both that they exist. It can be shown, secondly, of both, of matter as well as mind, that they are not created by our perceiving them. We perceive matter because it already exists. It exists whether we perceive it or no. It does not cease to exist because we have ceased to look at it. In this sense it has an independence, not, it may be, of God, but an independence of the percipient mind, of our perception of it. I am prepared to maintain that matter, like mind, has power of some kind. I do not assert that it has power independent of God—this is a question which carries us into a much higher region than our primitive perceptions. What I affirm is, that it has potency, influence of some kind. Now combine these three things: being, independence of our perceptions, and potency, and we have the true idea of substance. Thus understood, substance has no need of a substratum or support. Under God, who may himself be understood as a substance, it is its own support; and any other support would be a weakness. Everything possessing these three things may be regarded as a substance. Mind is a substance, for it has being, independence, and power. But matter is also a substance for the very same reasons.

Power.—His views on this subject are vague and unsatisfactory. He seems to regard all power as in God. He leaves no power whatever in body. “Matter neither acts, nor perceives, nor is it perceived.” The first question here is: Is it true? Can we prove it? I believe we know things in this world, we know ourselves as having power, and bodies as having power upon each other. I believe them to have such power in our primitive cognition of them. Experience confirms this. According to Berkeley there is no relationship between material things, except

that of coexistence and succession: one thing is a mere sign of another, and an arbitrary sign. These ideas which constitute all we perceive, can have no influence on each other. Now it seems to me that we are led to believe that they do act on each other. It can be shown that in all bodily actions there are two or more agents. A hammer strikes a stone and breaks it: the cause consists of the hammer and stone each in a certain state; the effect consists of the same hammer and stone in another state, the hammer having lost the momentum which it had when it came in contact with the stone, and the stone being broken. It seems plain to me that the cause here is not a mere arbitrary sign of the effect; the effect is the result of powers or properties of the agent. A second question may arise: What is the religious bearing of such a doctrine? According to it God "useth no tool or instrument at all" (I., 312); there are no second causes in nature, but only natural signs. There is "no sharing betwixt God and nature or second causes in my doctrine." Is there not a risk that this very pious doctrine land us in the very impious conclusion, that if all action is of God, sinful action must also be of him? If we have no knowledge of power in nature or in created mind, have we any proof of the existence of power in God? The doctrine was eagerly seized by Hume, who showed that according to it the mind could form no idea of power beyond a custom of expecting that things which have been unvariably together in our experience will continue to be together. Left without the idea of power in the cognition of ourselves or earthly objects, we have really no ground except this same custom, carried illegitimately beyond our experience, (which can give us no knowledge of world-making) for arguing the existence of God from his works in nature.

Signs.—The great truth which Berkeley helped to

establish, that distance can be known by the eye only by means of signs supplied by touch, opened new views, which he carried out further than he was logically entitled. From the beginning he meant to use the theory of vision, to establish his favorite principle that we do not perceive extended things out of the perceiving mind: we perceive merely the signs of things. What the eye discerns is merely the sign of something else discovered by touch. "We see distances as we see shame or anger in the looks of a friend" (I., 63). In his later works he carries out the same principle to touch, and shows that it makes known simply heaven-appointed and heaven-organized symbols of reality beyond. But this view involves a mistake in starting, and a want of logic in the process. It is not correct to say that the eye does not immediately discover extended body; it looks directly on an extended colored surface. The eye may need the aid of the muscular sense to reveal space in three dimensions, but it at once perceives space in two dimensions; and we are thus put in a position to understand the farther information conveyed by touch. Our secondary knowledge implies primary knowledge, and the elements of the secondary knowledge must be found in the primary. If there be the idea of extension in the derived knowledge, there must have been the idea of extension in the original knowledge. The looks of a man reveal shame and anger, because we already know these by self-consciousness. Signs cannot reveal to us anything not otherwise known in its materials. We certainly have the idea of an extended thing, and this could never be made known to us by a sign which was not itself extended. Signs are merely the antecedents or concomitants of things which we are enabled to conceive because we know them otherwise. Little did Berkeley see in arguing that we only see signs of things, that he was pre-

paring the way for the avenging skeptic, who allows the existence of the signs, but argues with David Hume and Herbert Spencer that the things signified are unknown and unknowable.

Lofty minds are apt to be particularly fascinated with the doctrine that nature is a system of universal symbolism. I believe as firmly as Berkeley ever did, that it is so; I believe with him that "the methods of nature are the language of its author" (I., 211). But I do so because the signs are real things, signs of other things. If the glass is visionary the things seen through it will be apt to be regarded as also visionary. As he advanced in life and enjoyed leisure in the bishopric of Cloyne, he eagerly turned to the study of Plato and the Neo-Platonists, and embodied the results in his *Siris, a Chain of Philosophical Reflections and Inquiries concerning the Virtues of Tar-Water*.

Mind.—Our author is very valiant in making inroads into the territories of his enemies; but meanwhile he leaves his own domain defenceless. "There is not any other substance than spirit, or that which perceives." But it is very difficult to tell us what he makes of spirit. Professor Fraser acknowledges, "Berkeley has no clear teaching about finite minds—*egos* as distinguished from the *Ego*" (IV., 638). Berkeley tells us, "the very existence of ideas constitutes the soul." "Consult, ransack the understanding; what find you there besides several perceptions or thoughts? Mind is a congeries of perceptions. Take away perceptions and you take away the mind. Put the perceptions and you put the mind" (IV., 438). Every one acquainted with the history of philosophy will perceive that this, the doctrine with which the young Berkeley started, is the very doctrine which Hume reaches: "Certainly the mind always and constantly thinks, and

we know this too. In sleep and trances the mind exists not, there is no time, no succession of ideas" (IV., 444). No wonder the editor says, "As to personal identity he is obscure." I would rather say, he is clearly wrong. He tells us again and again that mind or spirit is "not knowable, not being an idea" (IV., 462); a doctrine far lower than that of Locke, who maintains that we have an idea of mind by means of Reflection. "I have no idea of a volition or act of the mind; neither has any other intelligence, for that were a contradiction" (IV., 446). He seeks to save himself from palpably absurd consequences by drawing, in the second edition of his *Principles of Human Knowledge*, the distinction between Idea and Notion (taking the phrase, I believe, from Bishop Browne): "It must be admitted, at the same time, that we have some notion of soul or spirit, and the operations of the mind, such as willing, loving, hating, inasmuch as we know or understand the meaning of these words" (I., 170). But he never accurately defined what he meant by Notion; and his whole philosophy is left, in consequence, in an unsatisfactory condition.

In digging away the ground on which error has rested, I do not believe that Berkeley has left to himself a foundation on which to build a solid philosophy. "I approve," he says, "of this axiom of the schoolmen, *Nihil est in intellectu quod non prius fuit in sensu*. I wish they had stuck to it. It had never taught them the doctrine of abstract ideas" (IV., 457). His editor is evidently staggered with "this remarkable statement," and does not know very well what to make of it. His doctrine on this subject is a great deal lower than that of Locke, who made reflection as well as sensation an inlet of ideas, such as those of time, and power, and spirit, by which he so far counteracted the sensational tendency of his philosophy.

Berkeley is often appealing to intuition and reason in upholding his own favorite maxims, such as that there cannot be matter without mind, but has left no explanation of the nature and laws of these ultimate principles, or defence of their legitimacy. His negative appeal is to some "repugnancy," he does not tell us to what. These defects in the foundation are not to be repaired by abutments in the superstructure. There is a like defect in his ethical principles. "Sensual pleasure is the *summum bonum*. This is the great principle of morality. This once rightly understood, all the doctrines, even the severest of the gospels, may clearly be demonstrated. Sensual pleasure, *quâ* pleasure, is good and desirable by a wise man. But if it be contemptible 'tis not *quâ* pleasure but *quâ* pain; or (which is the same thing) of loss of greater pleasure" (IV., 457). This is a vastly more degraded view than that taken by Shaftesbury, of whom he speaks so disparagingly. We see how much need there was in that age of a Butler to give a deeper foundation to morality than Locke or Berkeley had done. There is greater need of a Butler than of a Berkeley in our time.

His view of space and time is thus rendered by his editor: "Finite Space is, with him, experience in unresisted organic movement which is capable of being symbolized in the visual consciousness of coexisting colors. Finite Time is the apprehension of changes in our ideas, length of time being measured by the number of changes. Infinite Space and Infinite Time, because inapprehensible by intelligence, are dismissed from philosophy as terms void of meaning, or which involve contradictions" (I., 117). If our natural judgments were not meant to deceive us there must be vastly more than this in Time, Space, and Infinity, say, the Infinity of God.

There is a very general impression that the philosophy of Berkeley is favorable to religion. That he meant it to be so is certain; that many have felt it to be so should not be denied. Taken apart from his speculations about tar-water and the non-existence of matter, the general influence of his writings is inspiring and ennobling, carrying us above the damp earth into the empyrean, where we breathe a pure and delicious atmosphere. His *Minute Philosopher* is distinguished by great acuteness, a lofty tone, and an alluring charm of manner and of style. The speakers appointed to oppose religion do not argue so searchingly as the objecting interlocutors do in Plato's dialogues; but they bring forward the current objections of the age, and the answer to them is complete. But our present inquiry is, What is the tendency of his system? And, whatever may be the immediate impression produced by it, the influence of a philosophy is determined by its logical consequences, which will come to be wrought out by some one. Hume declares that most of Berkeley's writings "form the best lessons of skepticism which are to be found either among the ancient or modern philosophers—Bayle not excepted," and he gives the reason, "they admit of no answer and produce no conviction." Hume certainly labored with all his might (and he was a mighty man) to make Berkeley teach lessons of skepticism. If bodies have an existence merely as perceived, people will argue that it may be the same with spirits; and Berkeley virtually allows the consequence. If matter has no substantial existence, why may it not be the same with mind? And, if so, what remains but Hume's sensations and ideas? Berkeley imagined he was getting new and special proof of the Divine existence by his doctrine of signs; but Hume came after him and showed that the

signs suggested things beyond them merely by the association of ideas ; merely by a phenomenon of sight suggesting a phenomenon of touch ; in fact merely by the two having been together. In particular, he showed that two sensations, with an interval between, gendered the illusive feeling of the continued existence of the sentient agent.

AGNOSTICISM OF HUME AND HUXLEY

WITH A NOTICE OF

THE SCOTTISH SCHOOL

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Part First.

DAVID HUME.

SECTION I.

A BRIEF ACCOUNT OF HUME'S LIFE.

IN the winter of the year 1723 there entered the University of Edinburgh a boy under twelve years of age (he was born April 26, 1711), who in his future life was to undermine all previous modern speculative thinking, and constrain philosophy to begin to build anew. This was David Hume, son of Joseph Hume or Home, advocate, but who passed his life as a country gentleman at Ninewells, near the borders of England. Entering college when he should have been at school, he was introduced, after getting an imperfect acquaintance with Latin and Greek, in the classes of logic, pneumatics, and moral philosophy, to subjects fitted only for men of matured powers and enlarged knowledge. I suspect there was no ruling mind among his teachers to sway him, and he was left to follow the bent of his own original and searching intellect.

We have two accounts of Hume's life, the one an autobiography, *My Own Life*, the other by Mr. Hill Burton, who had access to the papers collected by Baron Hume and deposited with the Royal Society of Edinburgh.¹

¹ In this paper I have made use of the larger article on Hume in my *Scottish Philosophy, Biographical, Expository, and Critical*.

"I was seized very early," he says in *My Own Life*, "with a passion for literature which has been the ruling passion of my life, and a great source of my enjoyments." In writing to a friend, July 4, 1727, he mentions having by him written papers which he will not make known till he has polished them, and these evidently contain the germs of a system of mental philosophy. He had to pass through a singular experience, which he details in a letter written, though probably never sent, to a physician, supposed by Mr. Burton to be Dr. Cheyne, author of the *Philosophical Principles of Natural Religion*, and a work on "Nervous Diseases." He begins with stating that he had always a strong inclination to books and letters, and that after fifteen years he had been left to his own choice in reading. "I found it to incline almost equally to books of reasoning and philosophy, and to poetry and the polite authors. Every one who is acquainted either with the philosophers or critics knows that there is nothing yet established in either of these sciences, and that they contain little more than endless disputes on the most fundamental articles. Upon examination of these I found a certain boldness of temper growing in me which was not inclined to submit to any authority on these subjects, but led me to seek out some new medium by which truth might be established. After much study and reflection on this, at last, when I was about eighteen years of age, there seemed to be opened up to me a new scene of thought which transported me beyond measure, and made me, with an ardour natural to young men, throw up every other pleasure or business to apply entirely to it. The law, which was the business I designed to follow, appeared nauseous to me, and I could think of no other way of pushing my fortune in the world but that of scholar and philosopher. I was infinitely happy in this course of life for some months, till at last, about the be-

ginning of September, 1729, all my ardour seemed in a moment to be extinguished, and I could no longer raise my mind to that pitch which formerly gave me such excessive pleasure. I felt no uneasiness or want of spirits when I laid aside my book; and, therefore, never imagined there was any bodily distemper in the case, but that my coldness proceeded from a laziness of temper which must be overcome by redoubling my application. In this condition I remained for nine months, very uneasy to myself, but without growing any worse—which was a miracle. There was another particular which contributed more than anything to waste my spirits and bring on me this distemper, which was, that having read many books of morality, such as Cicero, Seneca, and Plutarch, and being smit with their beautiful representations of virtue and philosophy, I undertook the improvement of my temper and will, along with my reason and understanding. I was continually fortifying myself with reflections against death and poverty, and shame and pain, and all the other calamities of life. These no doubt are exceeding useful when joined with an active life, because the occasion being presented along with the reflection, works it into the soul and makes it take a deep impression; but in solitude they serve to little other purpose than to waste the spirits, the force of the mind meeting with no resistance, but wasting itself in the air like our arm when it misses the aim. This, however, I did not learn but by experience, and till I had already ruined my health, though I was not sensible of it." He then describes the symptoms, scurvy spots breaking out on his fingers the first winter, then a wateryness in the mouth. Next year, about May, 1731, there grew upon him a ravenous appetite and a palpitation of heart. In six weeks, from "being tall, lean, and rawboned, he became on a sudden the most sturdy, robust, healthful-like fellow

you have seen, with a ruddy complexion and a cheerful countenance." He goes on to say that, "having now time and leisure to cool my inflamed imagination, I began to consider seriously how I should proceed with my philosophical studies. I found that the moral philosophy transmitted to us by antiquity labored under the same inconvenience that has been found in their natural philosophy, of being entirely hypothetical and depending more upon invention than experience; every one consulted his fancy in erecting schemes of virtue and happiness, without regarding human nature, upon which every moral conclusion must depend. This, therefore, I resolved to make my principal study, and the source from which I would derive every truth in criticism as well as morality." He tells how he had read most of the celebrated books in Latin, French, and English; how, "within these three years I find I have scribbled many a quire of paper in which there is nothing contained but my own inventions;" how he "had collected the rude materials for many volumes;" but, he adds, "I had no hopes of delivering my opinions with such elegance and neatness as to draw to me the attention of the world, and I would rather live and die in obscurity than produce them maimed and imperfect." "It is a weakness rather than lowness of spirits which troubles me," and he traces an analogy between what he had passed through and recorded religious experiences. "I have noticed in the writings of the French mystics, and in those of our fanatics here, that when they give a history of the situation of their souls they mention a coldness and desertion of the spirit which frequently returns." But, "however this may be, I have not come out of the cloud so well as they commonly tell us they have done, or rather began to despair of ever recovering. To keep myself from being melancholy on so dismal a prospect, my only security was

in peevish reflections on the vanity of the world and of all human glory ; which, however just sentiments they may be esteemed, I have found can never be sincere, except in those who are possessed of them. Being sensible that all my philosophy would never make me contented in my present situation, I began to rouse up myself." He found these two things very bad for this distemper, study, and idleness, and so he wishes to betake himself to active life. His choice was confined to two kinds of life, that of a travelling governor and that of a merchant. The first not being fit for him, he says he is now on his way to Bristol, to engage in business till he is able to "leave this distemper behind me." He says that "all the physicians I have consulted, though very able, could never enter into my distemper," and so he now applies to this eminent doctor.

We can understand the circumstances in which the youth was educated and on which his philosophy was formed. He had been carefully brought up, we are not told in what form of religion, by his mother, who described him as "a fine good-natured crater, but uncommon wake-minded," probably because he had not the energy of the young lawyers and gentry of the period. He lived in a region where the religious life was not so deep as in the covenanting country in the southwest of Scotland, and where indifferentism, called *moderatism*, was exercising a deadening influence. Deism had been started in the previous century in England by Herbert of Cherbury, and was defended in the early part of the eighteenth century by Blount, by Toland, by Middleton, by Tindal, by Whiston, and Collins. It had reached Scotland in 1732, when David Dugdeon, a farmer in Hume's district, published a deistical work called the *Moral World*. Hume must have known the controversies thus excited. Meanwhile he had become enamoured of the philosophy of the

Latins, as Cicero and Seneca ; and was familiar with the views of Descartes, Locke, and Berkeley, the names that stood highest in his day.

His friends had destined him for the law, but not liking it he thought of business. He says: "In 1734 I went to Bristol with some recommendations to eminent merchants, but in a few months found that scene totally unsuitable to me. I went over to France with a view of prosecuting my studies in a country retreat, and I there laid that plan of life which I have steadily and successfully pursued."

We can easily picture the youth of twenty-three as he set out for France. By nature he is one of a class of persons to be found in all countries, but quite as frequently in Scotland as anywhere else, who are endowed with a powerful intellect conjoined with a heavy animal temperament; and who, with no high aspirations, ideal, ethereal, or spiritual, have a tendency to look with suspicion on all kinds of enthusiasm and high-flown zeal. With an understanding keen and searching he could not be contented with the appearances of things, and was ever bent on penetrating beneath the surface ; and his native shrewdness, his hereditary predilections, and the reaction against the heats of the previous century, all combined to lead him to question common impressions and popular opinions. He saw the difficulties which beset philosophical and theological investigations, and was unable to deliver himself from them, being without the high sentiments which might have lifted him above the low philosophy of his own day in England and France, and the sophistries suggested by a restless intellect. He knew only the ancient Stoic philosophy in the pages of Roman authors and the modern philosophy of Locke, as modified by such men as Shaftesbury and Hutcheson, and driven to its logical consequences

by Berkeley ; he had tried the one in his practical conduct and the other by his sifting intellect, and having found both wanting he is prepared to abandon himself to skepticism, which is the miserable desert resorted to by those who despair of truth. Meanwhile his great intellectual powers find employment in constructing theories of the mind in which he himself perhaps had no great faith, but which seemed the logical conclusion of the acknowledged philosophical principles of his time, and quite as plausible as any that had been devised by others and brought such fame to their authors.

With these predilections France was the country which had the most attractions to him, but was at the same time the most unfortunate country he could have gone to ; and the middle of the eighteenth century the most unfortunate period for visiting it. In philosophy the age had outgrown Descartes and Malebranche, Arnauld and Pascal, and the grave and earnest thinkers of the previous century, and was embracing the most superficial parts of Locke's philosophy, which had been introduced by Voltaire to the knowledge of Frenchmen, who turned it to a wretched sensationalism. In religion he saw around him, among the great mass of the people, a very corrupted and degenerate form of Christianity ; while among the educated classes infidelity was privately cherished and was ready to burst out. Voltaire had issued his first attack on Christianity in his "Epître à Uranie," published in 1728, and carried English Deism into France. The fire spread with a rapidity which showed that there were materials ready to catch it and propagate it. Sixty years later, one so fond of order and peace would have been scared by the effects produced by skepticism, so powerful in overthrowing old abuses, and so weak in constructing anything new or better ; but at this time infidelity was full of hope and

promising an era of liberty and peace. The very section of the Catholic Church which retained the highest faith, and the purest morality had unfortunately been involved in a transaction which favored the skeptical tendency among shrewd minds. Only a few years before, the people believed that the sick were healed and the blind made to see at the tomb of a famous Jansenist, the Abbé Paris; and the noise made by the occurrences and the discussions created by them had not passed away when Hume arrived in Paris, and the youth pondered the event to bring it out years after in his *Essay on Miracles*. While he lived at La Flèche a Jesuit plied him with some "nonsensical miracle" performed lately in their convent; and then and there occurred to him the famous argument which he afterward published against miracles. "As my head was full of the topics of the *Treatise on Human Nature* which I was at that time composing, the argument immediately occurred to me and I thought it very much gravelled my companion; but at last he observed to me that it was impossible for that argument to have any validity, because it operated equally against the gospel as the Catholic miracles: which observation I thought fit to admit as a sufficient answer."

After living a short time in Paris he retired to Rheims, and afterwards went to La Flèche, where he passed two of the three years he spent in France. We know nothing of his employments these years, except that he devoted himself most earnestly to the composition of his *Treatise on Human Nature*. In 1737 he brought it over with him to London, where he published the two first books the end of the following year.

This Treatise is by far the most important of all his philosophical works. If we except certain speculations in history and political economy, it contains nearly all his

favorite ideas. He devoted to it all the resources of his mighty intellect. He had read extensively, pondered deeply, and taken immense pains in polishing his style. He could scarcely indeed be called a learned man in the technical sense of the term, but he was well informed. We could have wished that he had possessed wider sympathies with earnest seekers after truth in all ages, but this was not in the nature of the man. His knowledge of Greek was very imperfect at this time (he afterward renewed his acquaintance with that language): what he knew of Greek philosophy was chiefly through Cicero (his very pictures of the Stoics and Epicureans are Roman rather than Grecian), and he never entered into the spirit of such deep and earnest thinkers as Socrates, Plato, and Aristotle—he tells us somewhere that the fame of Aristotle is utterly decayed. In respect even of modern writers, he never comprehended the profundity of such men as Cudworth and Descartes in the previous century; and he had no appreciation of the speculations of Clarke and Leibnitz, who lived in the age immediately preceding his own. He belongs to the cold, elegant, doubting, and secular eighteenth century, and setting little value on antiquity, he builds for the present and the future on the philosophy of his own time.

As to style, which he greatly cultivated, the models which he set before him were the Roman prose writers, the French authors of his own day, and the Englishmen who were introducing the French clearness and point, such as Shaftesbury, Bolingbroke and Pope. He says “the first polite prose we have was writ by Swift.” Though he took great pains he never altogether succeeded in weeding out his Scotticisms, nor in acquiring a genuine English idiom; but his style is always clear, manly and elegant, and worthy of his weighty thoughts. When he broke down his

elaborate Treatise into smaller ones, he endeavored to catch the ease and freedom of the lighter French literature, but neither the subject of which he treats, nor the ideas of the author admit of such treatment, and though the Essays are more ornate and have more attempts at smartness and repartee, the student will ever betake himself to the Treatise as containing the only systematic and by far the most satisfactory statement of his views.

Having published his work he retired to Ninewells to wait the result. "Never was literary attempt more unfortunate than my *Treatise on Human Nature*. It fell dead-born from the press without reaching such a distinction as even to create a murmur among the zealots." He evidently felt disappointed. "I am out of humor with myself." But he was conscious of intellectual power, he had laid his plan for life, and he indomitably persevered in his literary career. Next year he printed at Edinburgh the third volume of his Treatise with no better success. He now began to break down his great work into smaller essays. In 1741 he printed the first, and in 1742 the second, of his *Essays Moral and Political*. The work was favorably received and he was encouraged. In 1748 he cast the first part of his Treatise into a new and more improved form in the *Inquiry Concerning Human Understanding*, which created no interest; but he persevered with his Essays, and in 1752 he published the second part, being his *Political Discourses*. This work was immediately received with acclamation, and being translated into French it procured him a high reputation and, in fact, raised those investigations which issued in making political economy a science in the *Wealth of Nations*.

Having set the youth and matured man with his opinions before my readers, it is not necessary to detail his remaining history. He spent most of his time in

Edinburgh, where he became the centre of a literary circle and encouraged literary men. He held for several years the office of Librarian of the Advocates' Library, and having there a valuable collection of books he began to execute his long-cherished plan of writing a History of England. He lived on friendly terms with the leaders of the church of Scotland, and encouraged them in their efforts to allay the religious fervor which had been so strong in the previous ages. On two occasions he sought to be appointed Professor of Moral Philosophy in the University of Edinburgh, but even his literary friends were doubtful as to the character of the morality to be taught to young men by one who had no religious convictions. Good-natured, sociable, and declining controversy with those who opposed him, he suffered few annoyances because of his scepticism; certainly none that deserves the name of persecution. Believing that speculative truth in philosophy or in religion was impossible, he was yet unwilling to be called an atheist, or even a deist, and professed to be seeking after light, which he never got.

In 1763 he received from the Earl of Hertford an invitation to attend him on his embassy to Paris. His visit to the capital of France on this occasion deserves a special notice as characteristic of the times. Dukes, marshals, foreign ambassadors vied with each other in honoring him. The famous men whose persons and conversations he liked best were D'Alembert, Marmontel, Diderot, Duclos, Helvetius, and old President Henault; and he writes to Dr. Blair and bids him tell Dr. Robertson that there was not a single deist among them, meaning that there was none but went farther. But he was the special favorite of the ladies—and we know what was their character—who at that time ruled the fashion in Paris. The Coun-

tess de Boufflers addressed him, declaring the "admiration which your sublime work (*The History of England*) has awakened in me." "I know no terms capable of expressing what I felt in reading the work. I was moved, transported, and the emotion which it caused me is in some measure painful by its continuance. It elevates the soul, it fills the heart with sentiments of humanity and benevolence; it enlightens the intellect by showing that true happiness is closely connected with virtue, and discovers by the same light what is the end, the sole end, of every reasonable being." "In truth, I believed I had before my eyes the work of some celestial being, free from the passions of humanity, who, for the benefit of the human race has deigned to write the events of these latter times!!" The philosopher is evidently gratified. "What new wonder is this which your letter presents to me? I not only find a lady, who, in the bloom of beauty and height of reputation, can withdraw herself from the pleasures of a gay court, and find leisure to cultivate the sciences, but deigns to support a correspondence with a man of letters, in a remote country, and to reward his labors by a suffrage the most agreeable of all others to a man who has any spark of generous sentiment or taste for true glory." This lady, it is proper to say, in plain terms, was the wife of the Comte de Boufflers, still alive, but the mistress of the Prince of Conti, who superintended for the king that mean diplomatic correspondence which he carried on unknown to his ministers. Hume might also be seen attending the evening salons of Madame Geoffrin, who had been the daughter of a valet de chambre, and was now the centre of a circle of artists and men of letters. He also waited on the entertainments of the famous Mademoiselle de l'Espinasse, who, originally an illegitimate child, had raised herself by being, first, the

humble companion, and then the rival of Madame du Deffand, and was well known to have been the mistress of a number of successive or contemporaneous lovers. There must have been something in the philosophy of Hume which recommended him to so many ladies of this description. We believe they were glad to find so eminent a philosopher, with a system which did not seem to bear hard upon them. The courtiers told him that Madame de Pompadour "was never heard to say so much of any man." He says of himself: "I eat nothing but ambrosia, drink nothing but nectar, breathe nothing but incense, and tread on nothing but flowers. Every man I meet, and still more, every lady, would think they were wanting in the most indispensable duty if they did not make a long and elaborate harangue in my praise."

But what, it may be asked, did he think of the state of society in which he had to mingle? It is evident that he was horrified at times with the proclaimed atheism of men and women. But what did he think of the morality of the circles in which he moved, more especially of the loose relationship of the marriage tie? Did this utilitarian theory of morals, of which he surely knew the bearing and tendency, allow of such a state of things? It is certain that Hume uttered no protest at the time, and he has left behind no condemnation of the morality of France, while he was fond of making sly and contemptuous allusions to the manifestations of religious zeal in his own country. The tone of morality in France could never have been amended by him, nor, we venture to say, by any utilitarian.

In his will he gave orders for the publication of his *Dialogues on Natural Religion*, a work written long before, and undermining all natural religion, to which his literary friends in Scotland still clung. He died August 26, 1776.

SECTION II.

IMPRESSIONS AND IDEAS.

Everybody knows that Hume was a sceptic. It is not so generally known that he has developed a full system of the human mind in his *Treatise of Human Nature*. His scepticism is unfolded in the form of a psychology. He claims to proceed, in the manner of his time, by observation. I am to proceed in the same way in opposing him. This is not the plan followed by the recent critics of Hume, on whose objections to his scepticism I set no value whatever, as they proceed on Kant's critical method. While Kant has established certain important truths he has not shown wisdom—such is my opinion—in his manner of meeting Hume. He has not opposed the sceptic at his entrance; he has allowed the Trojan horse to come in, and has thus introduced a foe which he has not been able to expel, and opened the way for a more widespread and devouring infidelity than Hume's direct attacks ever did. I am to follow Hume's method; but in doing so I discover by observation truths prior to, and above observation, which not only he, but his immediate philosophic predecessors, Locke and Berkeley, did not notice.

Locke had said, "Since the mind in all its thoughts and reasoning hath no other object but its own ideas, which it alone does and can contemplate, it is evident that our knowledge is only conversant about them" (Essay, B. iv., 1). Berkeley had put the question (Berkeley's Works, by Fraser, vol. i., 157), "what do we perceive besides our ideas and sensations." He fixes on a distinction between these two, the one being more strong and lively, and the other

faint. "The ideas of sense are more strong, lively, and distinct than those of imagination" (p. 170). "The ideas imprinted in the senses by the author of nature are called real things, and those excited in the imagination, being less regular, vivid, and constant, are commonly termed ideas" (172). At this point Hume started, using the very phrases of Berkeley, *impressions* (from *imprinted*) and ideas. He thus opens his *Treatise*: "All the perceptions of the human mind resolve themselves into two distinct kinds, which I call impressions and ideas. The difference betwixt them consists in the degree of force and liveliness with which they strike upon the mind, and make their way into our thought or consciousness. Those perceptions which enter with most force and violence we may name *impressions*, and under this name I comprehend all our sensations, passions and emotions, as they make their first appearance in the soul. By ideas I mean the faint images of these in thinking and reasoning; such, for instance, are all the perceptions excited by the present discourse, excepting only those which arise from the sight or touch, and excepting the immediate pleasure or uneasiness it may occasion."

Hume is to be met at this gate, by which he would enter. Kant, we may show in a future paper, betrayed the cause of genuine philosophy by granting what the sceptic demanded. We are not to be satisfied with the account which Hume gives, because it proceeds on what Locke and Berkeley and the prevalent philosophy of the day admitted. His appeal is to observation, and by it he is to be tried. Falling in with the theories of his time, he has given a wrong account, our observation being witness, of our perceptions. The sceptical conclusions which he has drawn should make us review the philosophy of his predecessors. We are not to follow him simply because he follows those who have gone before; we are to inquire by

the internal sense what our perceptions are. We never, in fact, have a mere impression or a mere idea, we have a thing impressed, and in our sense impression there is a thing impressing; and we have self receiving the impression and entertaining the idea. He has given a totally perverted view of our perceptions. In the perceptions of the mind there are things perceived. We have as good evidence, in fact the same evidence, a self-evidence, of the thing perceived as of the perception; in fact, the perception is of a thing, of self or body as perceived. We thus stop the sceptic at the entrance. We have thus realities, we have things as the basis, and upon this can rear a solid, and not an ideal philosophy.

It will not do to place under the same head and call by the one name two such things as the affections of the senses on the one hand, and the mental emotions of hope, fear, joy, and sorrow on the other. Nor can we allow him to describe all our sense-perceptions by the vague name of *impressions*. What is meant by *impression*, a term employed by Locke and Berkeley, and now adopted by Hume? If the word has any proper meaning, it must signify that there is something impressing—without which there would be no impression—and also, something impressed. If Hume admits all this to be in the impression, we ask him to go on with us to inquire what is in the thing impressed, and in the thing that impresses, and we are at once in the region of existences, internal and external. “I never,” he says, “catch myself at any time without a perception, and never can observe anything but the perception.” His very language contradicts itself. He talks of catching *himself*; what is this *self* that he catches? But he may say it is only a perception. We reply that there is more; we never observe a perception alone. We always observe self as perceiving. It is true that I never can catch myself at any

time without a perception ; but it is quite as certain, and we have the same evidence for it, that we never observe a perception except when we observe self-perceiving. Let us unfold what is in this self, and we shall find that it no way resembles an impression like that left by a seal upon wax.¹ In regard to certain of our perceptions, those through the senses, we observe not only the self-perceiving, but an object perceived.

SECTION III.

MEMORY.

He now explains the way in which *ideas* appear. By memory the impressions come forth in their original order and position as ideas. This is a defective account of memory, consciousness being the witness. In memory we have not only a reproduction of a sensation, or it may be a mental affection—we recognize it as *having been before us in time past*. Of all this we have as clear evidence as we have of the presence of the idea.² In imagination the

¹ As my object in this paper is not only to oppose Hume, but all who adopt his principles, I mean to attach a few notes to show how my criticisms apply to Mr. J. S. Mill, the ablest of the school. My quotations will be from his *Examination of Hamilton's Philosophy*. At this place I remark that as Mr. Mill derives all our ideas and convictions from sensations, he is to be met by showing that we never have a sensation without knowing *self* as sentient.

² At this point Mr. Mill has been driven into difficulties by Dr. Ward, and he avows it in a foot-note, page 174: "Our belief in the veracity of Memory is evidently ultimate ; no reason can be given for it which does not presuppose the belief and assume it to be well grounded." The full facts of the Recognitive Power of Memory are not embraced in this brief enunciation ; but there is much stated and more implied ; he should have inquired how much is involved, and he would have seen

ideas are more strong and lively, and are transposed and changed. This, he says, is effected by an associating quality, and he here develops his account of the laws of association which has been so commended. But the truth is, his views on this subject, so far from being an advance on those of Hutcheson, are rather a retrogression; they are certainly far behind those of his contemporary, Turnbull. He seems to confine the operation of association to the exercise of imagination; he does not see that our very memories are regulated by the same principle; nay, he allows that the imagination can join two ideas without it. The associating qualities are said by him to be three in number—resemblance, contiguity in time or place, and cause or effect. “I do not find,” he says, “that any philosopher has attempted to enumerate all the principles of association.” But the classification propounded by him bears so close a resemblance to that of Aristotle that we must believe that the one given by the Stagyrte had, in the course of his reading, fallen under his notice, though he had forgotten the circumstance. The difference between the two lies in Hume giving us cause and effect, instead of contrast, as proposed by the Greek philosopher. It has often been remarked that Hume’s arrangement is redundant, inasmuch as cause and effect, according to him, are nothing but contiguity in time and place.

He now shows how our complex ideas are formed. Following Locke, he represents these as consisting of substances, modes, and relations. He dismisses substance very summarily. He proceeds on the view of substance given by Locke, one of the most defective and unsatis-

that there is truth admitted fatal to his system. He should also have shown on what ground he proclaims this belief to be “evidently ultimate,” and then we might have shown that, on the same ground, that is, self-evidence, we are entitled to call in other ultimate beliefs.

factory parts of his philosophy. Locke stood up for some unknown thing called substance behind the qualities. Berkeley had shown that there is no evidence of the existence of such a substratum. Hume assumes that we have no idea of external substance different from the qualities, and he proceeds to show that we have no notion of the substance mind distinct from particular perceptions. "I believe none will assert that substance is either a color, or a sound, or a taste. The idea of substance must, therefore, be derived from an impression of reflection, if it really exist. But the impressions of reflection resolve themselves into our passions and emotions, none of which can possibly represent a substance." A substance is thus nothing else than a collection of particular qualities united by the imagination. He thus suits the idea to his preconceived theory, instead of looking at the peculiar idea and suiting his theory to the facts. Now I give up the idea of an unknown substratum behind the qualities. I stand up only for what we know. In consciousness we know self, and in sense-perception we know the external object as *existing things exercising qualities*. In this is involved what we reckon the true idea of substance. We can as little know the qualities apart from an object exercising them, as we can an object apart from qualities. We know both in one concrete act, and we have the same evidence of the one as the other.

When he comes to Modes he examines them by the doctrine of abstract or general ideas propounded by Berkeley, which he characterizes "as one of the greatest and most valuable discoveries that has been made of late years in the republic of letters." According to this very defective theory (as it appears to us), all abstract or general ideas are nothing but particular ones annexed to a certain term. Like Locke, Hume confounds abstract and general

ideas, which should be carefully distinguished, the former meaning the notion of the part of an object as a part, more particularly an attribute; the other, the notion of objects possessing common attributes, the notion being such that it embraces all the objects possessing the common attributes. Abstraction and generalization are most important intellectual operations, the one bringing specially to view what is involved in the concrete knowledge (not impression) of the individual, and the other exhibiting the qualities in respect of which objects agree. Without such elaborative processes we should never know all that is involved in our original perceptions by sense and consciousness. Nor is it to be forgotten that when the concrete is a real object, the abstract is a real quality existing in the object, and that where the singulars are real the universal is also real, that is, a class, all the objects in which possess common qualities. Here again we find Hume overlooking one of the most essential of our mental attributes, and thus degrading human intelligence. In relation to the particular end for which he introduces his doctrine, we hold that substance and mode are known in one concrete act, and that we can separate them by abstraction for more particular consideration; the one being quite as real an existence as the other, and both having their reality in the singular object known by sense and consciousness.

SECTION IV.

SPACE AND TIME.

He goes on to a very subtle discussion as to our ideas of space and time. He says that "it is from the disposition of visible and tangible objects we receive the idea of

space, and from the succession of ideas and impressions we form the idea of time.” The statement requires to be amended. It is not from the disposition of separate objects we have the idea of space, but in the very perception of material objects we know them as extended, that is, occupying space; and in the very remembrance of events we have time in the concrete, that is, events happening in time past. He is, therefore, wrong in the sceptical conclusion which he draws, that the ideas of space and time are no distinct ideas, for they are ideas formed by a high intellectual process from things immediately known. Taking a defective view of the nature and function of abstraction, he denies that we can form any idea of a vacuum or extension without matter. He maintains that the idea we form of any finite quality is not infinitely divisible. The dispute, he says, should not be about the nature of mathematical points, but about our ideas of them; and that in the division of our ideas we come to a minimum, to an indivisible idea. This whole controversy seems to me to arrive from a misapprehension. Our *idea* of space, it is evident, is neither divisible nor indivisible, and as to space, it is not divisible either finitely or infinitely, for while we can divide matter, that is, have a space between, we cannot separate any portion of space from all other space: space is and must be continuous. He is evidently jealous of the alleged certainty of mathematics, which seemed to be opposed to his universal scepticism. His aim is to raise up doubts and difficulties, some of which we may not be able to resolve, while yet we have a body of clearly perceived and certain truth. He maintains that the objects of geometry are mere ideas in the mind. We admit that surfaces, lines, points, have no independent existence, but they have all an existence in solid bodies. We are capable of perceiving the relations

between them, and can thus construct a science of mathematics in which truth is seen intuitively in considering the objects. By an excess of ingenuities and subtleties he would drive us to the conclusion that space and time are mere ideas for which we need not seek a corresponding reality, a conclusion unfortunately accepted by Kant, who thus opened the way to the empty idealism which so long reigned in the German philosophy.¹

The result reached is summed up in the statement, "As long as we confine our speculations to the *appearances* of objects to our senses, without entering into disquisitions concerning their real nature and operations, we are safe from all difficulties, and can never be embarrassed by any question." But, "if we carry our inquiry beyond the appearances of objects to the senses, I am afraid that most of our conclusions will be full of scepticism and uncertainty." The intelligent reader will here perceive the source whence Kant derived his doctrine, that the senses give us not things but *phenomena*, that is, appearances, and that we are involved in contradiction when we suppose that they furnish more. However great the logical

¹ Mr. Mill's treatment of Space and Time is superficial. He brings in Time quietly, without noticing it, or giving any account of it. He does not see that the idea of it is involved in the concrete in memory; we remember the event as happening *in time past*. He derives our idea of Space from that of the time occupied by our muscular sensations. "When we say that there is a space between A and B, we mean that some amount of these muscular sensations must intervene." Resisting points "are said to be at different distances from one another, because the series of intervening muscular sensations is longer in some cases than in others" (pages 225-229). He thus avowedly makes (page 227,) an "identification" of length in time and length in space "as one," whereas our consciousness declares them to be as different as it is possible for ideas to be. Besides, the hypothesis on which he and Professor Bain build their whole theory of the origin of our idea of extension, viz., the sensations of our muscles, is disproven by physiology.

power of the German metaphysician, it is clear that he did not possess the shrewdness of the common-sense philosopher of Scotland when he adopted the conclusion of the sceptic as his starting-point.

SECTION V.

RELATIONS AND BELIEF.

He has now to face the important subjects of Existence and Knowledge. Proceeding on his assumption that nothing is present to the mind but perceptions, he argues, we think, logically (if the premises be allowed) that we can never advance a step beyond ourselves, and that it is "impossible for us so much as to conceive or form an idea of anything specifically different from ideas or impressions." As knowledge had been represented by Locke as consisting in comparison (we reckon this a false and dangerous doctrine), Hume has to consider the relations which the mind of man can discover.

These he represents as being seven, those of Resemblance, Identity, Space and Time, Quantity, Degree, Contrariety, Cause and Effect. This is a very good enumeration of the relations perceptible by man: it is certainly very much superior to that of many later metaphysicians, British and Continental. But he proceeds to show how little is involved in the relations discovered. "These relations may be divided into two classes, into such as depend entirely on the ideas which we compare together, and such as may be changed without any change in the ideas." In Class First he places Resemblance, Contrariety, Degree, Proportion. These depend solely on our ideas. These only can be the objects of knowledge and certainty, but they can never go beyond our ideas which can never

2. go beyond our impressions. But in fact the discovery of resemblances and differences, of degree and proportion, largely widens our knowledge. In CLASS SECOND the other three, Identity, Space and Time, Cause and Effect, do not depend on our ideas, and might seem to carry us beyond them, but this he shows is an illusion. In identity and time and space we can never "go beyond what is immediately present to the senses," and so can never discover the real existence or the relations of objects. But by the powers which discover relations we can go beyond what is present to the senses, and go on from the present to distant objects and the remotest time past and future. The relations perceived are not in our ideas, but in the things perceived within and without us. And so he goes on to say, "'tis only causation which produces such a connection as to give us assurance, from the existence or action of one object, that 'twas followed or preceded by any other existence or action." He devotes the whole energy of his intellect to the task of showing that we know nothing of the nature of the relation between cause and effect; that we know their conjunction within our experience, but not their connection.

3. In discussing this question and kindred ones he finds it necessary to explain the nature of Belief. "The belief of the existence of an object joins no new ideas to those which compose the idea of the object." What then is the difference between belief and incredulity? It consists solely in the liveliness of the former. "We must not be contented with saying that the vividness of the idea produces the belief. We must maintain that they are individually the same." "The belief or assent which always attends the memory and senses is nothing but the vivacity of those perceptions they represent, and this alone distinguishes them from imagination." The theory is surely

palpably false here, for our imaginations, in which there is no faith, are often livelier than our memories, in which there is belief. But by this theory he would account for all our beliefs. He would establish it as a general maxim in the science of human nature, that when any impression became present to us it not only transports the mind to such ideas as are related to it, but likewise communicates to them a share of its force and vivacity. "A present impression being vivid conveys its vividness to all the ideas which are associated with it by such general laws as those of resemblance, contiguity, and causation. A person that has lost a leg or an arm by amputation endeavors for a long time afterward to serve himself with them. After the death of any one 'tis a common remark of the whole family, but especially the servants, that they can scarce believe him to be dead, but still imagine him to be in his chamber, or in any other place where they were accustomed to find him." The explanation may seem a very ingenious, but it is a very feeble one. We may believe that we saw a particular person yesterday, though we have no lively impression or idea regarding him; and we do not believe in the existence of Achilles, though the reading of Homer has given us a vivid conception of him.¹

¹ Mr. Mill has made a most unwarrantable application of the laws of association in accounting for the formation of our higher ideas. He labors to derive all our ideas from sensation through association. But sensations, say of sounds, smells, colors, and forms, or of pleasure and pain, can never be anything else than sensations, that is, sounds, smells, colors, forms, pleasures, or pains, and never can of themselves yield such ideas as those of space and time, cause and effect, moral good and moral obligation. But then he gives to association a sort of chemical power, by it changes a series of successive or contemporaneous ideas into something different from any of the ideas, just as oxygen and hydrogen by their union form a third substance, water. He is to be met

But this theory is employed to give an explanation of our belief in the relation of cause and effect. The one having always been with the other in our experience, we

here by showing that the laws of the association are merely the laws of the succession of our ideas, and they do not generate a new idea. Repeated association may quicken the flow of our ideas, and make several as it were coalesce into one, or it may weaken some and intensify others, but it cannot yield a new element. Even on the supposition that there is (which there is not) a chemical power in association to transmute one thing into another, this would be a new and different capacity, not in the sensations and associations, but superinduced upon them. Mr. Mill's professed evolution of our higher ideas out of sensation by association is a mere jugglery in which he changes the elements without perceiving it, and overlooks the peculiarities of the composites he would explain.

He has been guilty of an equal error in very much overlooking the relations which the mind of man discover; and so far as he does notice them, in giving a very inadequate account of them. In this respect he is far behind Hume, who we have seen gives a very comprehensive summary of them. So far as Mr. Mill treats of them he (followed by Professor Bain) seems to give the mind no other power of comparison than that of observing resemblances and differences. Nor is this his worst error. He confounds the judgments of the mind with associations, and thus endeavors in a plausible but superficial way to account for that conviction of necessity which is appealed to as a test of fundamental truth. "If we find it," he says, "impossible by any trial to separate two ideas, we have all the feeling of necessity the mind is capable of" (p. 264). Now there is here the confounding of two things that are very different, the association of two ideas, so that the one always calls up the other, with the judgment which declares that two things are necessarily related. The letter A suggests the letter B—this is one mental phenomenon; we decide that two plus two make four and that it cannot be otherwise—this is an entirely different phenomenon. Now it is this necessity of judgment, and not the invariable association that is the test of first truths. When we thus show that association cannot produce a new idea, and that judgment, especially necessary judgments, are something different from associations, we deprive Mr. Mill's theory of the plausibility which has deceived the London critics bred at the English universities—where, I may take the liberty of saying, they would be very much the better for instruction in a sound and sober philosophy.

are led by habit and proceeding on the principle of association, when we find the one to look for the other ; and thus too the effect being present, that is an impression, gives its vividness to the cause as an associating idea. "The idea of cause and effect is derived from experience, which presenting us with certain objects constantly conjoined with each other, produces such a habit of surveying them in that relation that we cannot, without a sensible violence, survey them in any other." This is his explanation of what is implied in efficacy, agency, power, force, energy, connection, productive quality. The essence of necessity is "the propensity which custom produces to pass from an object to the idea of its usual attendant." "When any object is presented to it, it immediately conveys to the mind a lively idea of that object which is usually found to attend it, and this determination forms the necessary connection of these objects." His definition of cause is "an object precedent and contiguous to another, and so united with it that the idea of the one determines the mind to form the idea of the other, and the impression of the one to form a more lively idea of the other."

Hume's doctrine is founded on his favorite principle, "that all our ideas are copied from our impressions." But the necessary connection of cause and effect cannot be in the impression, for "when I cast my eye on the known qualities of objects, I immediately discover that the relation of cause and effect depends not the least on them." Not being in the impression, it cannot be found in the idea. Now it is here, we apprehend, that Hume is to be met. We have disputed his theory that the mind begins with mere impressions : it commences with the perception or knowledge of objects within itself and without itself. Now in its primitive perception of objects it knows them as having power ; it knows self as a power and it knows

the not-self as a power—as a power in resisting and impressing the self. Here is the *impression*, if any one will call it so (we call it knowledge), that gives use to the idea, which may be separated in thought by abstraction and put in the form of a maxim by generalization.

Unfortunately, as I think, the opponents of Hume have
1 not always met him at the proper point. They have allowed to him that we have no original knowledge of power in the objects, and having given this entrance to the sceptic, they find great difficulty in resisting his further ravages. Sometimes they have endeavored to discover a *nexus* of some kind *between* the cause and its effect, but have always failed to tell what the bond is. Causation is not to be regarded as a *connection between* cause and effect, but a power in the object, that is, substance (or objects and substances), acting as the cause to produce the effect.
J Kant labored to oppose the scepticism of the Scotchman by supposing that the mind by its own forms bound together events in its contemplation of them. But when he allowed that the power was not in the objects, he introduced a more subtle and perilous skepticism than that which he sought to overthrow. We avoid this subjective idealism by insisting that it is on the bare contemplation of a thing becoming, and not by the mere association of ideas and custom (which may aid), that we declare that it must have had a cause.

SECTION VI.

PERSONALITY AND IDENTITY.

He is now prepared to discuss two questions, "Why we attribute a continued existence to objects even when they are not present to the senses, and why we suppose them to have an existence distinct from the mind and perception." He shows, as to the first, the senses give us nothing but a present perception, and as to the second, that our perceptions being of ourselves can never give us the least intimation of anything beyond. He dwells in the usual manner on the acknowledged unreality of what have been called the secondary qualities of matter, and as we naturally look upon the primary qualities, such as motion and solidity, and the secondary qualities, such as colors, sounds, heat, and cold, as alike real, so we must philosophically consider them as alike unreal. After the manner of the times he rejects the notion that we can immediately perceive our bodily frame and not mere impressions, and that we can know both the "objects and ourselves." But whence, it is asked, the coherence and constancy of certain impressions? He accounts for it on the principle that the thought, according to the laws of association, slides from one impression to others with which it has been joined and reckons them the same, and mistakes the succession of images for an identity of objects. The result reached by him is: "All our distinct perceptions are distinct existences," and "the mind never perceives any real connection among distinct existences." "What we call mind is nothing but a heap or collection of different impressions united together by certain relations, and supposed, though falsely, to be endowed with a perfect simplicity and identity."

He gives the same account of what we call matter. He shows that having nothing but impressions we can never, on the mere ground of a conjunction which we have never witnessed, argue from our perceptions to the existence of external continued objects; and he proves (very conclusively, we think, on his assumption) that we could never have any reason to infer that the supposed objects resemble our sensations.¹ He now draws his sceptical conclusion: "There is a direct and total opposition betwixt our reason and our senses, or more properly speaking betwixt those conclusions which we form from cause and effect and those that persuade us of the continued and independent existence of body. When we reason from cause and effect we conclude that neither color, sound, taste, nor smell has a continued and independent existence. When we exclude these sensible qualities there remains nothing in the universe which has such an existence."

¹ Here again, from like premises, Mr. Mill has arrived at much the same conclusions. Mind, according to him, is "a series of feelings" with "a belief of the permanent possibility of the feelings." He is to be met by showing that in every conscious act we know self as existing; that when we remember, we remember self as in some state; and that on comparing the former self with the present we declare them to be the same. This implies more than a mere series of feelings or a belief (he does not well know what to make of this belief) in possibilities—it implies a self existing and feeling now and in time past. Again, "Matter may be defined the permanent possibility of sensation." He is to be met here by showing that we apprehend matter as an existence external and extended, and that we cannot get this idea of extension from mere sensations which are not extended (see *supra*, foot-note, p. 22). As to the contradiction between the senses and the reason which Hume allows, Mr. Mill makes the reason and senses say the same thing, that we can know nothing whatever of matter except as the "possibility of sensation," and that it "may be but a mode in which the mind represents to itself the possible modifications of the ego" (p. 189), which ego is but a series of feelings. This conclusion is quite as blank as that reached by Hume.

SECTION VII.

HIS RELIGIOUS SCEPTICISM.

The question is, How is such a scepticism to be met? Reid opposed it by showing that the sensation led us intuitively to believe in the existence of the external thing, and that the states of self, known by consciousness, implied a thinking substance. The more correct statement seems to me to be that we know at once the external objects, that intuitively we know our own frame and objects affecting it, that we are conscious not of states arguing a self but of self in a certain state, and that on comparing a former self recalled by memory and a present self known by consciousness, we declare them to be the same. Kant certainly did not meet the scepticism of Hume in a wise or in an effective manner when he supposed that the unity was given to the scattered phenomena by forms in the mind.

It is clear that all the usual psychological arguments for the immateriality and immortality of the soul are cut up and destroyed by this theory. We cannot speak of the soul as either material or spiritual, for we know nothing either of matter or spirit except as momentary impressions. "The identity which we ascribe to the mind of man is only a fictitious one." Identity is nothing really belonging to these different perceptions, but is merely a quality which we attribute to them because of the union of their ideas in the imagination when we reflect upon them.

His theory of causation undermines the argument for the Divine existence. He carefully abstains from dwell-

ing on this in his great philosophic work, but he expounds it at length and with all his intellectual power in his *Dialogues on Natural Religion*. We know nothing of cause except that it has been observed to be the antecedent of its effect; when we have noticed an occurrence usually preceded by another occurrence we may, on discovering the one, look for the other. But when we have never seen the events together, we have really nothing to guide us in arguing from the one to the other. We can argue that a watch implies a watchmaker, for we have observed them together, but never having had any experience of the making of a world, we cannot argue that the existence of a world implies the existence of a world-maker. There is no effective way of answering this objection but by maintaining that an effect necessarily implies a cause. It was on this ground that he was met by Reid, who argues that traces of design in God's works argue an intelligent cause. Kant deprived himself of the right to argue in this way by making the mind itself impose the relation of causation on events, so that we cannot argue that there is a corresponding law in the things themselves. Hume urges with great force and ingenuity, as Kant did after him, that if we are compelled to seek for a cause of every object we must also seek for a cause of the Divine Being. This is to be met by showing that our intuitive conviction simply requires us to seek for a cause of a new occurrence. He argues, as Kant also did after him, that the existence of order in the universe could at best prove merely a finite, and not an infinite cause. The reply is that we must seek for the evidence of the infinity of God in the peculiar conviction of the mind in regard to the infinite and the perfect.¹

¹ Mr. Mill has adopted Hume's doctrine of causation with a few modifications. The question is, Has he left to himself or to his followers an

This may be the most expedient place for stating and examining his famous argument against miracles, as advanced in his essay on the subject. It is clear that he could not argue, as some have done, that a miracle is an impossibility, or that it is contrary to the nature of things. He assails not the possibility of the occurrence of a miraculous event but the proof of it. Experience being with him the only criterion of truth, it is to experience he appeals. He maintains that there has been an invariable experience in favor of the uniformity of nature, and that a miracle being a violation of a law of nature can never be established by as strong proof as what can be urged against it. He then exerts his ingenuity in disparaging the evidence usually urged in behalf of miraculous occurrences by showing how apt mankind are to be swayed on such subjects by such principles as fear, wonder, and fancy. We are not sure whether Hume has always been opposed in a wise or judicious manner by his opponents on this subject. It is of little use showing that there is some sort of original instinct leading us to believe in

argument for the Divine existence? He advises the defenders of theism to stick by the argument from design, but does not say that it has convinced himself. The advice is a sound one; we should not give up the argument from design because of the objections of Kant, which derive their force from the errors of his philosophy. Mr. Mill says that we can "find no difficulty in conceiving that in some one of the many firmaments into which sidereal astronomy now divides the universe events may succeed one another at random, without any fixed law" (*Logic*, B. iii., C. 21). We should like to see an attempt made to construct an argument for the Divine existence by those who accept this view. Mr. Mill shows that our belief in the uniformity of nature is the result of experience. But the uniformity of nature is one thing and causation is a different thing. He should be met by showing that we have a necessary conviction, that every thing that begins to be has a cause, and that he has utterly failed in deriving this conviction from sensations and associations.

testimony, for this instinct, if it exists, often leads us astray, and we must still go to experience to indicate what we are to trust in, and what we are to discard. But the opponents of Hume were perfectly right when they showed that in maintaining that nature always acted according to certain mundane laws they were assuming the point in dispute. Let us admit that the whole question is to be decided by experiential evidence. Let us concede that in the present advanced state of science there is ample evidence that there is a uniformity in nature; but then let us place alongside of this a counterpart fact that there is a sufficient body of evidence in favor of there being a supernatural system. For this purpose let the cumulative proofs in behalf of Christianity, external and internal, be adduced: those derived from testimony and from prophecy, and those drawn from the unity of design in the revelation of doctrine and morality, and from the character of Jesus, and we shall find that in their consistency and congruity they are not unlike those which can be advanced in behalf of the existence of a natural system.

SECTION VIII.

MORALS.

In Book Second he treats of the Passions, on which he seems to me to throw no light, and therefore I pass it over.

In Book Third he treats of Morals, and starts his utilitarian theory, which, however, he develops more fully, and in a livelier, more pointed, and ornate manner in his essay—"An Inquiry Concerning the Principles of Morals." He says of this work, that it "is of all my writings, historical, philosophical, or literary, incomparably the best."

In respect to practical influence it has certainly been the most important. By his speculative doubts in regard to the operations of the understanding he has furnished a gymnastic to metaphysicians ever since his time, but by his theory of virtue he has swayed belief and practice.

He shows that we cannot distinguish between good and evil by reason alone, defining reason as the discovery of truth or falsehood, and truth and falsehood as consisting in the agreement or disagreement, either to the real relation of ideas or to real evidence and matter of fact. Taking reason in this sense it certainly cannot be said to discern the morally good; but then it may be maintained that the mind has a power of discerning moral good and evil analogous to the reason which distinguishes truth and falsehood, and all that he could urge in opposition would be, that such a view is inconsistent with his theory of impressions and ideas. It is by no means clear what is the faculty or feeling to which he allots the function of perceiving and approving the morally good. Sometimes he seems to make man a selfish being, swayed only by motives of pleasure or pain, and in this view, virtue is to be regarded as good because associated directly or indirectly with the pleasure it could bring to ourselves. But in other places he calls in a "benevolent sentiment leading us to approve what is useful." Hume's general theory might certainly seem opposed to every thing *innate*, and yet in criticising Locke he is obliged to say, "I should desire to know what can be meant by asserting that self-love or resentment of injuries or passion between the sexes is not innate." We have already quoted passages in which he appeals to instincts. He says elsewhere, "The mind by an *original* instinct tends to unite itself with the good and avoid the evil." At times he seems to adhere to the theory of Shaftesbury and Hutcheson as to the existence

of a moral sense. "The mind of man is so formed by nature, that upon the appearance of certain characters, dispositions, and actions, it immediately feels the sentiment of approbation or blame." He tells us expressly that he is inclined to think it probable that the final sentence in regard to moral excellence "depends on some internal sense or feeling which nature has made universal in the whole species." We believe that we cannot account for the ideas in the mind except by calling in such a faculty or feeling; and it was his business, as an experimental inquirer, to ascertain all that is in this power, and to determine its mode of operation and its laws. But such an investigation would have overthrown his whole theory, metaphysical as well as ethical.

According to Hume, virtue consists in the agreeable and useful. "Vice and virtue may be compared to sounds, colors, heat, and cold, which according to modern philosophy are not qualities in objects but perceptions in the mind." "Virtue is distinguished by the pleasure and vice by the pain, that any active sentiment a character gives us by his mere view and contemplation." This theory goes a step farther than that of Hutcheson in the same direction. Hutcheson placed virtue in benevolence, thereby making the intention of the agent necessary to virtue, whereas Hume does not regard it as necessary that it should be voluntary and requires us to look merely to the act and its tendency. His definition might lead one to think that an easy road or a pleasant carriage should be regarded as virtuous. But he will not admit that because an inanimate object may be useful as well as a man that therefore it ought also to merit the appellation of virtuous, for he says: "The sentiments excited by utility are in the two cases very different, and the one is mixed with affection, esteem, approbation, and not the other." This lan-

guage, more particularly the phrases "esteem" and "approbation," might have led him to discover that there is a peculiar judgment or sentiment attached to virtuous action not produced by mere utility.

He easily satisfies himself that he can show that benevolence is a virtue because it is so agreeable and useful. But he never faces the real difficulty, which is to account for the sense of obligation which we feel and the obligation actually lying upon us to do good to others.¹ He strives to show that justice is commended by us because of its beneficial tendency. Justice can have a meaning, he maintains, only in regard to society and arrangements made with others. True, the giving to every one his due implies beings to whom the due is owing, but the due arises from the relation in which we stand to these beings. Thus the first man or woman having children had duties to discharge toward them as soon as they were born, and independent of any promise. He labors to prove that our obligation to keep a promise arises from utility. "Fidelity is no natural virtue and promises have no force antecedent to human conventions." True, a promise implies a person to whom it is made, but once made the obligation is complete.

This leads us at once to the fundamental objections which may be taken to the utilitarian theory. Whence the obligation lying on us to promote the happiness of others? to give others their due? to keep our promises? From their utility, it is answered. But why are we bound to attend to what is useful? is the question that immediately occurs. Why the reproach that follows and which justi-

¹ In his *Utilitarianism* Mr. Mill has endeavored to defend the theory from the objections commonly taken to it. But he has utterly failed in his attempt to derive our idea and conviction of moral good from mere sensations and associations of sensation.

fies itself when we have failed to keep our word? These questionings bring us to a justice which guards conventions, to a law which enjoins love.

The practical morality sanctioned by the system and actually recommended by Hume excludes all the higher virtues and loftier graces. The adoration of a Supreme Being and love to him are represented as superstition. He has no God to sanction the moral law, and no judgment-day at which men have to give in an account. Repentance has and can have no place in a system which has no fixed law and no conscience. Humility, of which he treats at great length, is disparaged. The stern virtues of justice, of self-sacrifice, of zeal in a good cause, of faithfulness in denouncing evil, and of courage in stemming the tide of error and corruption, these are often so immediately disagreeable that their ultimate utility will never be perceived except by those who are swayed by a higher principle. It is certain that they were not valued by Hume, who speaks of them as superstition and bigotry and characterizes those who practise them as zealots and fanatics. His view of the marriage relation was of a loose and flexible character and did not profess to discountenance the evil practices of his time. "A man in conjoining himself to a woman is bound to her according to the terms of his engagement. in begetting children he is bound by all the ties of nature and humanity to provide for them sustenance and education. When he has performed these two parts of duty, no one can reproach him with injustice or injury." Not acknowledging a God bestowing the gift of life and requiring us to give an account of the use we make of it, and setting no value on courage in difficulties, he argues that a man may take away his life when it is no longer useful.

The state of society which he aimed at producing is thus described: "But what philosophical truths can be

more advantageous to society than those here delivered, which represent virtue in all her genuine and most engaging charms, and make us approach her with ease, familiarity, and affection? The dismal dress falls off with which many divines and some philosophers have covered her, and nothing appears but gentleness, humanity, beneficence, affability; nay, even at proper intervals play, frolic, and gayety. She talks not of useless austerities and rigors, suffering and self-denial." People have often speculated as to what Hume would have taught had he been elected Professor of Moral Philosophy in Edinburgh. I believe he would have expounded a utilitarian theory ending in the recommendation of the pleasant social virtues, speaking always respectfully of the Divine Being but leaving his existence an unsettled question.

And what, it may be asked, is the conclusion to which he wishes to bring us by his whole philosophy? We are not sure that he has confessed this to himself. Sometimes it looks as if his sublime aim was to expose the unsatisfactory condition of philosophy, in order to impel thinkers to conduct their researches in a new and more satisfactory manner. "If, in order to answer the doubts started, new principles of philosophy must be laid, are not these doubts themselves very useful? Are they not preferable to blind and ignorant assent? I hope I can answer my own doubts, but if I could not is it to be wondered at?" We verily believe that this was one of the alternatives he loved to place before him to justify his scepticism. "I am apt," he says in writing to Hutcheson, "to suspect in general that most of my reasonings will be more useful in furnishing hints and exciting people's curiosity than as containing any principles that will augment the stock of knowledge that must pass to future ages." But I suspect that the settled conviction reached by him was that no certainty

could be attained in speculative philosophy ; he was sure that it had not been attained in time past. The tone of the Introduction to his great work is : " There is nothing which is not the subject of debate and in which men of learning are not of contrary opinions." " If truth be at all within the reach of human capacity, 'tis certain it must be very deep and abstruse, and to hope we shall arrive at it without pains, while the greatest geniuses have failed with the utmost pains, must certainly be esteemed sufficiently vain and presumptuous." Its being thus deep, he feels as if the great body of mankind need not trouble themselves much about it. He seems at times complacently to contemplate this as the issue to which he would drive mankind ; for he sees at once that if men become convinced that they cannot reach certainty in such speculations, they will give up inquiry. " For nothing is more certain than that despair has almost the same effect upon us as enjoyment, and that we are no sooner acquainted with the impossibility of satisfying any desire than the desire itself vanishes," and he thinks it a satisfactory condition of things when men discover the impossibility of making any farther progress," and " make a free confession of their ignorance." Considered in this light, Hume's philosophy, in its results, may be considered as an anticipation of the Positive School of M. Comte, which in the British section of it approaches much nearer the position of Hume than most people are aware of.

He allows that man should, as indeed he must, follow his natural impulses and the lessons of experience, as far as this world is concerned. But he will grant nothing more. He thus closes his inquiry into the understanding : " When we trace up the human understanding to its first principles we find it to lead us into such sentiments as seem to turn into ridicule all our past pains and industry,

and to discourage us from future inquiries." "The understanding, when it acts alone and according to its general principles, entirely subverts itself, and leaves not the lowest degree of confidence in any proposition, either in philosophy or common life." In common life this scepticism meets with insuperable barriers which we should not try to overcome. But it is different with philosophical, and we may add theological truths, which are supported solely by speculative considerations. In these departments we may discuss and doubt as we please without doing any injury. "What injury can ever come from ingenious reasoning and inquiry? The worst speculative sceptic I ever knew was a much better man than the best superstitious devotee." Those who think they can reach truth in these matters are at liberty to cherish their conviction, provided always that they do not thereby disturb their neighbors. But the time is coming, and already wise men see it is coming, when mankind will not concern themselves with such speculative questions, or will engage in them only as a gymnastic to the intellect, or as a means of showing that ultimate truth is unattainable by man.

Part Second.

HUXLEY.

SECTION IX.

HUXLEY'S HUME.

PROFESSOR HUXLEY is a man of strong intellectual tastes and tendencies. He is evidently an enthusiast in his biological studies. It is not so generally known that he is also a metaphysician. This he has shown in his published address on Descartes and in other papers. He has now come forward to defend the study. (See *Popular Science Monthly*, May, 1879.) Kant has made the remark that we cannot do without a metaphysics, and others have noticed that those who affect to discard them will commonly be found proceeding, without their being aware of it, upon a very wretched metaphysics. The Professor now tells us: "In truth, the attempt to nourish the human intellect upon a diet which contains no metaphysics is about as hopeful as that of certain Eastern sages to nourish their bodies without destroying life." He adds, "By way of escape from the metaphysical will-o'-the-wisps generated in the marshes of literature and theology, the serious student is sometimes bidden to betake himself to the solid ground of physical science. But the fish of immortal memory

who threw himself out of the frying-pan into the fire was not more ill-advised than the man who seeks sanctuary from philosophical persecution within the walls of the observatory or of the laboratory." He shows that such conceptions as "atoms," and "forces," and as "energy," "vacuum," and "plenum," all carry us, whether we will or no, beyond a physical to a metaphysical sphere.

I rather think that the Professor's metaphysics were derived primarily from David Hartley, but especially James Mill, reckoned an age or two ago in England the chief philosophical authorities by those not trained at the two English universities. Hartley connected metaphysics with physiology, and James Mill, after abandoning the trade of preacher, adopted the fundamental principles of David Hume and transmitted them to his son John Stuart Mill, who modified and improved them by independent thought and a larger acquaintance with other systems. Professor Huxley has now in this work on Hume given his own philosophy, which is substantially that of Hume and James Mill, with some not very valuable suggestions from Bain, and a criticism now and then derived from Descartes and Kant, of whose profounder principles he has, in the meanwhile, no appreciation. It is expounded in the form of an epitome of the system of the Scottish sceptic, with constantly interspersed criticisms of his own. His style is not that usually supposed to be philosophic: it is not calm, or serene, or dignified; but it clearly expresses his meaning and it is graphic, living, and leaping. He shows everywhere great acuteness, and the shrewdness of one who is not to be taken in by show and pretension or awed by authority. No man is quicker in starting an objection, which, however, may be of a surface character and not penetrating into the heart of the subject. I cannot discover in his speculations the calmness of one who is waiting for light,

or the comprehension of one who goes round the object examined and views it on all sides.

Mr. Darwin has elected and proclaimed Professor Huxley as the philosopher of his school, and this when many would place Herbert Spencer above him. I treat and criticise him as such. Most of the members of the school are not professed metaphysicians; but like the man in the French play who spoke prose all his life without knowing it, there is a metaphysics underlying their reasonings, and this metaphysics, without their being aware, is very much that of Mr. Huxley. I venture not to urge objections to his biology, of which he is a master and to be reviewed only by a master in his department. But he is not so formidable as a metaphysician, and one with but a sling and stone may cast him down and scatter the philosophy of his admiring host, by a few facts as clearly revealed to our inner consciousness as the facts of physiology are to the external senses.

We have seen that Hume makes the mind percipient only of Impressions and Ideas. Huxley adopts this defective view. He amends it by simply classifying the IMPRESSIONS into *A*, Sensations; *B*, Pleasure and Pain; and *C*, Relations. Let us confine our attention for the present to the first two, to Impressions *A*, of Sensation, and *B*, of Pleasure and Pain. Let us notice what we have got as he describes it: "When a red light flashes across the field of vision there arises in the mind an impression of sensation which we call red. It appears to me that this sensation red is something which may exist, altogether independently of any other impression or idea, as an individual existence." "The whole content of consciousness might be that impression." These Impressions with the Pleasure and Pain are represented by him as knowledge; this without a thing knowing or a thing known. It is such knowl-

edge with which man starts, such knowledge as man can attain, and the foundation of all other knowledge.

He has already laid the foundation of Agnostics. He has started with an assumed principle from which only nescience can follow. These Impressions can never by logic or any legitimate process give us the knowledge of things. The addition or multiplication of 0 can give us only 0; so the additions or multiplications of Impressions, of Sensations, of Pleasures and Pains, can give us only Impressions in Sensations and in Pleasures and Pains.

Now all this is to be met by showing that the mind begins in sense-perception with the knowledge of things. It knows this stone as an existing and resisting object. It knows self as perceiving this object. "The whole content of consciousness" never is a mere impression, say a sensation of red. It is of a thing impressed. If I am asked for my proof, I answer that all this is contained in my very consciousness. I have in fact the same evidence of this as I have of the existence of the impression "red." I am conscious of self perceiving a red object. Indeed, any impression I may have is an abstraction taken from the self impressed.

II. Omitting for the present the Impressions of Relation, we now view the only other content which he gives the mind, IDEAS, which he defines "copies or reproductions in memory of the foregoing." We are here at the point at which Mr. J. S. Mill was so perplexed. He saw, and acknowledged in his candor, that in memory there is more than a mere copy or a reproduction. There is *the belief that the event remembered has been before us in time past*. We thus get the idea of time always in the concrete, that is an event in time, and by abstraction we can separate the time from the events in time. We have got more. We intuitively believe that we are the same persons at the

present time as we were when, days or years ago, we witnessed the event. We cannot be made to believe otherwise. In this process we are adding knowledge to knowledge, and this a knowledge of ourselves and of other things. These are all revealed to and attested by consciousness, the organ of things internal. The person who would overlook such important facts as these in the animal structure would be terribly lacerated by our acute zoölogists.

III. The next step in the progress of the mind is the discovery of Relations. Hume's account of the relations which the mind can discover is taken from Locke, and improved, and is very large and comprehensive. He makes them to be seven in number: Resemblance, Identity, Space and Time, Quantity, Quality, Contrariety, Cause and Effect. He exerts all his ingenuity, I believe fruitlessly, to show that these cannot extend our knowledge beyond impressions, and ideas, which are mere reproductions of impressions. They are relations of impressions and ideas, and not of things. We meet this scepticism on the part of Hume, and agnosticism on the part of Huxley, by maintaining that what we perceive originally are things, and what we perceive by the faculty that discovers relations are relations of things. When we classify plants by their resemblances, we classify the plants and not impressions. When we decide that a thing which begins to be must have a cause, we have a reality, first in the thing that begins to be, which implies, secondly, a reality in the cause which we regard as producing it. It is thus that we argue that the present configuration of the earth, being an objective reality, is the result of agencies which acted thousands or millions of years ago. It is thus that we argue that the adaptation we see in the eye must have had a cause in an adapting, that is, a designing power.

Professor Huxley's account of the Relations which the

mind can discover, is much more meagre than that of Hume. Apparently following Professor Bain, he makes them consist in coexistence, succession, and similarity. He thus gets rid dexterously of the Relations of Quantity, on which mathematics, with all their certainty, so obnoxious to the sceptic, depend; and of Identity, which certifies to the soul's continued and permanent existence; and of Causation, which leads us from harmonies and adaptations, from order and design in nature, to rise to a producing power in a designing mind. The three which he acknowledges—Similarity, Coexistence, and Succession—are all regarded as relations among Impressions and Ideas, and tell us nothing as to realities.

This is the intellectual furniture of the mind, according to Huxley. Observe what it is: Impressions, Ideas and Relations among these. He calls these the "Contents of the Mind." It is the most miserably defective account of the mental powers I have met with anywhere, more so than that given even by Condillac and the sensational school of France, who gave to the mind a power of transforming its sensations into a considerable number and variety of elevated ideas.

IV. Having thus allotted to the mind so small a content, he finds it the more easy to refer the whole to cerebral and nervous action. "The upshot of all this is, that the collection of perceptions which constitutes the mind is really a system of effects, the causes of which are to be sought in antecedent changes of the matter of the brain, just as 'the collection of motions' which we call flying is a system of effects, the causes of which are to be sought in the modes of motion of the muscles of the wings. . . . What we call the operations of the mind are functions of the brain, and the materials of consciousness are products of cerebral activity."

The Professor here defends a doctrine from which I rather think Hume would have turned away. With all his scepticism Hume was fond of dwelling on mental rather than on material operations. Such sentences show that Huxley may be properly called a materialist. He denies, indeed, that he is a materialist. The fact is, that he is an agnostic, believing in neither mind nor matter as substances. But then he makes all agency material. "The roots of psychology lie in the physiology of the nervous system." He gives a physical basis to all mental action—inconsistently, I think, for I cannot find that on his principles he is entitled to seek for any basis. Neither reason nor experience sanctions the doctrine that matter can produce mind; that molecules or masses of matter can think, or feel, or discover the distinction between good and evil. At this point Huxley seems to separate from such men as Tyndall and Du Bois Reymond, who tell us that to bridge the wide gulf that divides mind from matter is altogether beyond human capacity or conception.

V. At this point it will be necessary to refer—I can do so only briefly—to the question so important in philosophy, as to whether the mind discovers some objects and truths at once, and without a process, that is, by intuition. Hamilton, in his famous Note A, appended to his edition of Reid's *Collected Works*, has shown that all thinkers, including even sceptics, have been obliged to assume something without proof, and to justify themselves in doing so. In my *Examination of Mr. J. S. Mills' Philosophy*, I have shown that, in his *Examination of Hamilton's Philosophy* he has assumed between twenty and thirty such principles. With Locke, I hold that the primary mark of these intuitions is self-evidence. We perceive things and truths by simply looking at them. Intuitions are not high *à priori* truths independent of

things, but they are involved in the very nature of things, and we perceive this as we look at them. Thus we know, by simply looking at them, that things exist; that if two straight lines placed alongside proceed an inch without coming nearer each other, they will not approach nearer, though prolonged through all space; that two things plus two things make four. Truths thus self-evident to our minds become necessary; we cannot be made to judge or decide that they are not true. Necessity is commonly put forward by metaphysicians such as Leibnitz and Kant as the test of these truths. I regard it as the secondary, the primary being self-evidence.

Hume and Huxley have discussed the question of Necessity, especially as applied to Causation. Hume accounts for it by custom and association of ideas; we are accustomed to see cause and effect together, and when we see the one we are constrained, whether we will or not, to think of and expect the other. But this is not the kind of necessity which metaphysicians appeal to. Necessity as a test of truth is a necessity of cognition, belief, or judgment, arising from our viewing the nature of the object, as, for example, when on contemplating two straight lines, we perceive, without any mediate proof, that they cannot inclose a space. Our commentator on Hume has equally misunderstood the nature of this necessity. He speaks of three kinds of necessity. The first is one merely requiring the consistent use of language: "The necessary truth $A=A$ means that the perception which is called A shall always be called A." This throws no light on our convictions. The second, "The necessary truth that 'two straight lines cannot inclose a space,' means that we have no memory, and can form no expectation of their so doing." The instance he gives is a good example of an intuitive truth seen at once, and necessarily believed; but

it surely implies vastly more than merely that we have no memory, and can form no expectation of the straight lines inclosing a space; it means that we perceive that, from the very nature of things, two such lines cannot inclose a space. He has a third case of necessity, "The denial of the necessary truth that the thought now in my mind exists, involves the denial of consciousness." This is also an example of a self-evident, necessary truth, but it is so because we have an immediate knowledge of ourselves as existing.

VI. Hume's doctrine of causation takes a double form; the one objective, the other subjective. These two are intimately connected, and yet they should be carefully separated. Hume held that objective causation is only invariable antecedence and consequence. This is a doctrine contradicted both by metaphysical and physical science. It seems very clear to me that our intuitions, looking on objects, declare that they have power. This is implied in the axiom that we know objects as having properties; and what are properties but powers? Then modern science has established the doctrine of the conservation of energy, namely, that the sum of energy, actual and potential, in the world is always one and the same. Causes are not causes simply because they are antecedents; they are antecedents of the effects because they have power to produce them.

It would be preposterous, in so short a paper as this, to dive into all the subtilities of the subjective question, as to whether our belief in causation is intuitive, or is derived from a gathered experience. The settlement of this question will depend on the way we settle the one started under the last head, as to whether there are not truths which shine in their own light. If there be such truths, then causation is undoubtedly one of them. When we

see a thing produced, a new thing, or a change in an old thing, we look for a producing cause having power in its very nature, and ready to produce the same effect in the same circumstances.

VII. By his doctrine, defective as I reckon it, Hume undermined the argument for the Divine Existence. There is evidence in his life, in his correspondence, and in his philosophic writings, that, like John Stuart Mill, in a later age, he looked with a feeling of favor upon the seeming evidence for the existence of a designing mind in the universe. But neither of these men could find a conclusive argument. Huxley follows them here. The three are to be met in the same way. The philosophy of all of them is erroneous. Man has the capacity to discover that, by the very nature of things, everything that begins to be must have a cause. If a world begins to be, if there be a fitting of things to one another in the world, then there must be an adequate cause in a power and purpose on the part of an intelligent Being. Our agnostics can answer this only by making man incapable of knowing anything of the nature of things.

VIII. According to the philosophy of Hume, there is and can be no evidence of the immortality of the soul. If the mind be the product of matter, specially of the collection of nerves, then, on the dissolution of the body generally, and especially of the brain, there is no proof that the soul survives; indeed there remain no means, in fact, no possibility of its action. The moral argument so powerfully urged by Kant in favor of a judgment-day and a life to come to satisfy the full demand of the law, is entirely undermined in a philosophy which does not admit of an authoritative and imperative morality, and does not call in a God to make the moral law work out its effects. This scepticism is to be met by showing that mind and matter

are made known to us by different organs: the one by the self-consciousness, and the other by the senses; and that they are known as possessing essentially different properties, the one as thinking and feeling, and the other as extended and resisting our energy. That the body dies is no proof that the soul must also die. If these truths be established it is seen that the usual arguments for another life retain their force. Believing in God and in his law, we are convinced that He will call all men to judgment.

IX. But it may be urged that though the philosophic or scientific arguments on behalf of religion fail us, we may resort to revelation. But both Hume and Huxley deprive us of this refuge. Hume does not, like certain bewildered German speculators, deny the possibility of a miracle. His position is, that there is no evidence to support any given miracle. He defines miracles as a violation of the laws of nature, and labors to show that the testimony on behalf of a miracle is more likely to be false than that the order of nature should be violated. Huxley objects to his definition of a miracle, as many had done before. But he urges the same objection in a somewhat different form. "The more a statement of fact conflicts with previous experiences, the more complete must be the evidence to justify us in believing it" (p. 133). He decides that there is no such evidence as is fitted to sustain an occurrence so contrary to our experience as a miracle. Huxley advances nothing new on this subject, and the defenders of Christianity maintain that they can meet the objections he adopts. They show first, that they can produce testimony in favor of certain miracles, such as the resurrection of Jesus from the dead, more full and explicit than can be advanced in behalf of the assassination of Julius Cæsar or the best authenticated occurrences in ancient times. They show, secondly, that there is an accu-

mulation and a combination of evidence in favor of the life and mission of Jesus Christ: in the prophecies uttered ages before; in the results that followed the propagation of the Gospel; and above all in the fitness of Christ's work to remedy the acknowledged evils in the world, and in its adaptation to the felt wants, moral and spiritual, of man. It might be shown that the cumulated evidence in behalf of the Christain revelation is not unlike that brought to prove the uniformity of nature.

X. Professor Huxley has nothing original to advance on the subject of Moral Good. Neither Hume nor Huxley holds the selfish theory of morals. Both hold that man has a native instinct which leads him to sympathize with his neighbor and to be pleased at seeing him happy. So far both are right; but on the very same ground on which it is shown that there is a disposition in our nature to promote the pleasure of others, it can be shown that there is a principle in our nature which leads us to approve of what is good and condemn what is evil.

We are now in a position to discover and comprehend what Agnosticism is as expounded by its eminent living philosopher. Notwithstanding the meaning of the term, it is claimed by the whole school that there is knowledge gradually accumulating. According to our Professor, there are sensations, there are pleasures and pains, and among these are relations of coexistence, of succession and similarity. By observing these we may form science, which is systematized knowledge. He who is master of the sciences is a learned man and may be very proud or vain of his acquirements. Professor Huxley, as being acquainted with a number of the sciences, is undoubtedly possessed of much knowledge.

What then, it may be asked, is defective or faultworthy in the philosophy of Agnostics? Its error lies in its avowed

fundamental principle that we know only impressions, or as Kant expresses it, appearances, and do not things either mental or material. All that we know are impressions, impressions recalled and impressions correlated. The correlations constitute the various sciences.

There are *savans* who have a large acquaintance with these impressions and their correlations. But all the while they know nothing and never can know, or come nearer knowing the things thus appearing and thus correlated as appearances—if indeed there are any things. It is not positively asserted that there are things, but it is certain according to Kant, followed by Spencer, that they are unknown and unknowable by man with his present faculties. It is curious to find the metaphysical Hume and the physical Huxley at one on this point.

In one sense Huxley is entitled to deny that he is a materialist. He believes as little in the existence of matter as he does of mind. But he does claim that the impressions which we call mental are produced by those we call material, namely, cerebral action. So far he is a materialist, and the undoubted tendency of his philosophy is materialistic—he makes matter the basis even of mental action. He is not, like Hume, a sceptic, for he does not affirm that there are no things; all that he says is that if they exist we cannot know them, or rather that things known to us are merely impressions in the shape of sensations—of sensations remembered and correlated. He is not an atheist, not he; he only says that we have no proof of the existence of God. He is simply an honest Agnostic, not believing in mind or in matter or in God. What is the tendency of such a system?

It makes us feel that we are in a world of illusions. I say illusions and not deceptions; for as nature does not profess or promise anything it cannot be charged with in-

tentional deception. But then we may be deceiving ourselves or deceiving others; and Agnostics show that we are doing so. I maintain that it strips us of many of our natural beliefs—beliefs which men have entertained in all ages and countries. The great body of mankind believe that they themselves, and the objects that they have to deal with, are more than impressions, and that they are realities in a real world; that there is matter that is solid, that there is mind that thinks and feels, that we all possess a soul, and that our neighbors also have souls. I am prepared to show that these convictions are valid; that we have the same evidence of a self thinking and of body resisting our activity as we have of the existence of impressions. But suppose these convictions removed, and how do we feel, and what have we left us?

all. Will we be apt to set a higher value on life when we know it to be a mere bundle of impressions with unsubstantial ideas growing out of them? Will we take a deeper interest in our neighbors when we have come to believe (theoretically, for to believe this practically is impossible) that they too are a mere congeries of appearances? Will we be disposed to do more for the world when we regard it as a set and series of phantasmagoria bound by rigid uniformities of likeness, coexistence, and succession? Will we be more likely to feel that life is worth living for, and that it is our duty to work for its good, when we contemplate it as in fact a mere succession of images which do not reflect any reality? Will not one hindrance to self-indulgence be removed when we are made to acknowledge that sensations and pleasures are realities, and that there are no others? Will not one restraint on self-murder, which we may be tempted to commit when in trouble, be removed when we are sure that we are merely stopping a flow of sensations? Will the regret of the learned mur-

derer be deepened when he is told that he has merely laid an arrest on a few pulsations? Will the seducer be more likely to be kept from gratifying his lust when the highest philosophy teaches him that the soul of his victim is a mere collection of nerves? Is the youth who has run in debt less likely to rob his master when he is assured that both he and his master are mere throbs in the vibrations which constitute life? Agnosticism never can become the creed of the great body of any people; but should it be taught by the science and philosophy of the day, I fear its influence on the youths who might be led, not to amuse themselves with it, but by faith to receive it, would be that they would find some of the hindrances to vice removed, and perhaps some of the incentives to evil encouraged.

Part Third.

A NOTICE OF THE SCOTTISH SCHOOL.

SECTION X.

THOMAS REID.¹

He was born April 26, 1710, at Strachan, in the heart of the Grampians, in Aberdeenshire. He was descended from a succession of Presbyterian ministers, and his mother was Margaret Gregory, who connected him with the illustrious family of that name, who did so much for the literature and science of Scotland. He was for a time at the parish school of Kincardine, where his teacher foretold "that he would turn out to be a man of good and well-wearing parts." He entered Marischal College, Aberdeen, when only twelve years of age, and was taught philosophy by George Turnbull, one of the founders of the Scottish School. He graduated at the age of sixteen, but being appointed librarian to the university he continued his college life till 1736. In 1737 he was ordained minister of New Machar, where he met at first with some opposition from the people, who were attached to the Evangelical party in the church; but he gradually overcame this by the propriety of his conduct, his conscientiousness,

¹ I may refer to the fuller account of Reid and the other Scottish metaphysicians in my *Scottish Philosophy*.

and his kindness. While minister there he was a hard student, and engaged, as his follower and biographer, Dugald Stewart, tells us, in "a careful examination of the laws of external perception, and of the other principles which form the groundwork of human knowledge," his chief relaxations being gardening and botany. At the mature age of thirty-eight he published, in the *Transactions of the Royal Society of London*, an *Essay on Quantity*, opposing the application of geometry to moral subjects. In 1752 he was elected professor in King's College, Aberdeen, where he was surrounded with an able body of colleagues in the two universities, and by thoughtful ministers and professional men beyond the colleges. He was the main instrument of forming the famous "Aberdeen Philosophical Society," where valuable papers were read, and which called forth what may be called the Aberdeen branch of the Scottish School of Philosophy.

It was the publication of Hume's treatise on Human Nature in 1739, that first directed him specially to philosophic research. In the end of 1763 he published his most original work, *An Inquiry into the Human Mind, on the Principles of Common Sense*. About the same time he was appointed Professor of Moral Philosophy in the University of Glasgow, and was there a most successful and acceptable professor, giving valuable instruction to all his pupils, and giving an intellectual stimulus to many men, such as Dugald Stewart, who rose to eminence. In 1785 he published *Essays on the Intellectual Powers of Man*, and in 1788 the *Essays on the Active Powers*, his two most elaborate works. He died October 7, 1796.

If he is not the founder (this honor belongs to Francis Hutcheson) he is the fit representative of the Scottish Philosophy. He is in every respect a Scotchman; shrewd, cautious, outwardly calm, and yet with a deep feeling

within (he often shed tears when he spoke of the love of Christ at a communion-table,) and capable of enthusiasm; not witty, but with a quiet vein of humor. He has the truly philosophic spirit; seeking truth humbly, modestly, diligently, piercing beneath the surface to gaze on the true nature of things, and not to be caught by sophistry or misled by plausible misrepresentations. He has not the mathematical consecutiveness of Descartes, the speculative genius of Leibnitz, the sagacity of Locke, the spirituelle of Berkeley, or the detective skill of Hume; but he has a quality quite as valuable as any of these, even in philosophy; he has in perfection that common sense which he so commends, and thus saves himself from the extreme positions into which these great men have been tempted by their soaring genius or inexorable logic. "It is," says he, "genius, and not the want of it, that adulterates philosophy." He inquires carefully into the subjects he is studying; and if he does not comprehend them thoroughly he acknowledges it, and what he does see, he sees clearly and describes honestly. "The labyrinth may be too intricate, and the thread too fine to be traced through all its windings, but if we stop when we can trace it no farther, and secure the ground we have gained, there is no harm done, and a quicker eye may at times trace it farther." Speculative youth are apt to feel that, because he is so sober and makes so little pretension, he cannot possibly be far-seeing or profound; but this is at the time of life when they have risen above taking a mother's advice, and become wiser than their father; and after following other and more showy lights for a time, they may be obliged at last to acknowledge that they have here the light of the sun, which is better than that of the flashing meteor.

He claims credit on two points: one in examining and undermining the ideal theory of sense-perception; the

other in establishing against Hume the principle of common sense.

I. His *Inquiry* is occupied almost exclusively with the senses. It is one of the excellences of his philosophy, as compared with most of those that have gone before, that (with Aristotle) he so carefully inquired into these original inlets of knowledge. He shows that he was acquainted with all that had been done in physiology down to his time, and that he had been in the way of making original observations. He goes over the senses one by one, beginning with the simpler—smell and taste—and going on to the more complex—hearing, touch, and sight. Under smell he announces a number of general principles applicable to all the senses, as in regard to sensation considered absolutely, and the nature of judgment and belief. Under hearing he speaks of natural language; and under touch of natural signs and primary qualities. He dwells at greatest length on sight; discussing such topics as color, visible figure, extension, the parallel motion of the eyes, squinting, and Berkeley's theory of vision.

He denies, first, that we perceive by means of ideas in the mind, or out of it, coming between the mind and the natural object perceived; secondly, that we reach a knowledge of the external object by means of reasoning; and thirdly, that in order to the conception of anything it is necessary to have some impression or idea in our mind which resembles it, particularly setting himself against the doctrine of Locke, that our ideas of the primary qualities are resemblances of them. What he advances on these points seems to me clear and satisfactory. He has done special service to philosophy by removing those confusing intermediaries which were called ideas. It may be that the great body of philosophers had not drawn out for their own use such a doctrine of ideas as Reid ex-

poses ; it may be, that some of them, if the question had been put to them, would have denied that they held any such doctrine ; it may be, as Hamilton has tried to show, that some few held a doctrine of perception without ideas ; but I believe Reid was right in holding that mental philosophers did bring in an idea between the mind perceiving and the external object ; that some created an image in the mind or in the brain ; that some objectified the internal thought, and confounded it with the object perceived ; and that the greater number had not clearly settled what they meant by the term they employed. The service which Reid has done to philosophy by banishing the intermediaries between sense-perception, and its external object, say the body, cannot be overestimated. It brings nearer to the true doctrine which is, that we immediately perceive matter and thus begin with a reality in the self and not self. He has not been so successful in establishing a doctrine of his own as in opposing the errors of others. He maintains that there is first a sensation in the mind, and that this sensation suggests a perception. The word suggestion, to denote the rise of a thought in the mind, was adopted by Reid from Berkeley, who again took it from Locke. He holds that "there are natural suggestions, particularly that sensation suggests the notion of past existence, and the belief that what we remember did exist in time past ; and that our sensations and thoughts do also suggest the notion of a mind and the belief of its existence and of its relation to our thoughts. By a like natural principle it is that a beginning of existence or any change in nature suggests to us the notion of a cause, and compels our belief in its existence. . . . And, in like manner, certain sensations of touch, by the constitution of our nature, suggest to us extension and solidity" (*Collected Works* by Hamilton, p. 111). He adopts from Berkeley a doctrine of natural

language and signs. There are natural signs "which, though we never had any notion or conception of the thing signified: to suggest it, or conjure it up as it were by a natural kind of magic and at once give us a conception and create a belief in it." He calls "our sensations signs of external objects." What Reid represents as two acts, the one going before the other, constitute one concrete act, and can be separated only by a process of abstraction. There is not first a sensation of a colored surface and then a perception of it; but we have the two at once. This does away with the necessity of signs and suggestions which might be quite as troublesome as ideas. There are both sensation and perception, but the two constitute one concrete act, and they can be separated only by a process of abstraction. The correct statement is, not that the sensations "suggest to us extension, solidity, and motion," but we perceive at one and the same time objects at once as extended, solid, and in motion.

Hamilton has gone beyond Reid and laid down the doctrine of immediate perception. When he began to edit Reid's *Collected Works* he thought that Reid's doctrine was the same as his own. But as he advances he sees it is not so, and he comes to doubt whether Reid did not himself retain some portions of the intermediate theory. While Hamilton has defended the true doctrine, he has not carried it out consistently. He makes our knowledge of things relative to the mind, and supposes, with Kant, that the mind adds subjective elements to the primitive cognitions, and thus makes it impossible to distinguish between what is real and what is not so in our perceptions. He claims that "venturing a step beyond Reid no less than Kant" (*Reid's Coll. Works*, p. 126), he brings on our perception of space both an *à priori* conception with Kant, and an *à priori* perception with Reid.

The true account is that our cognition of extension is one intuitive perception.

II. I do not think it necessary to state and examine Reid's classification of the faculties, which is of no great value. I have stated and examined his view of Perception. It remains only to look at his view of Judgment: "We ascribe to reason two offices and two degrees. The first is to judge of things self-evident, the second to draw conclusions which are not self-evident from those that are. The first of these is the province, and the sole province, of common sense; and therefore it coincides with reason in its whole extent, and is only another name for one branch or degree of reason" (p. 425). He divides the principles of common sense into two classes; as they are contingent, or as they are necessary and immutable, whose contrary is impossible.

I doubt whether the distinction he draws between contingent and necessary truths is so profound as he would represent it. The test of the latter is that their contrary is impossible. But is not this true of all the principles of common sense? Some of the principles enumerated under the head of contingent truths have no claim to be regarded as original laws of reason, such as the signification of the sound of the voice, and the gestures of the body, the belief in human testimony and the uniformity of nature. They seem rather to be the result of a gathered experience to which we may be impelled by natural inclination. If these laws are principles of reason there could be no exceptions; but every one knows that the sound of the voice and the expression of the countenance and human testimony may deceive, and it is conceivable that the present order of things may be changed. It is necessary to have a more searching exposition of primary principles than Reid has furnished.

Reid evidently took the phrase "common sense" from Shaftesbury's *Characteristics*. The phrase was used by Locke, Shaftesbury, and Hutcheson, who all brought in an internal as well as a bodily sense, the two latter calling in a moral sense and a sense of beauty, and employing the phrase to intimate that there are other sources of ideas besides sensation, or sensation and reflection. The fundamental objection to the term is that it is ambiguous. Aristotle denoted by *κοινὴ αἴσθησις* the knowledge imparted by the senses in common. This long continued to be one of the meanings of the phrase, but by Reid's time this use had ceased in the English tongue. In the use which he makes of it there is an unfair ambiguity. It denotes the combination of qualities which constitutes *good sense*, being, according to an old saying, the most uncommon of all the senses. This valuable property is not possessed by all men, and is the result of a number of gifts and attainments, such as an originally sound judgment and a careful observation of the ways of mankind. In this sense common sense is not entitled to be appealed to as the arbiter in philosophy, though it may keep us from much error. But the phrase has another and a different signification in philosophical works, including Reid's. It denotes the aggregate of original principles planted in the minds of all. It is only in this latter sense that it can be legitimately employed in overthrowing scepticism or for any philosophic purpose. Reid rather dexterously takes advantage of both these meanings. He would show that the views he opposes, though supported by men of high intellectual powers, have the good sense of mankind against them.

Hamilton has succeeded, in his famous Note A, appended to his edition of Reid, in showing that the argument as employed by Reid is valid in itself and legitimately used

against scepticism. The appeal is to principles in our constitution which all are obliged to admit and act upon. But the account after all is partial. It brings before us the mark of universal consent, but does not bring into prominence the self-evidence and necessity—it shows some of the radicles but overlooks the main, the tap-root. It needs to be made more comprehensive.

But meanwhile let us observe to what point in the onward progress the Scottish school has brought us.

SECTION XI.

CHARACTERISTICS OF THE SCOTTISH SCHOOL.

I. *It proceeds throughout by observation.* It has all along professed a profound reverence for Bacon, and in its earliest works it attempted to do for metaphysics what Newton had done for physics. It begins with facts and ends with facts. Between, it has analyses, generalizations, and reasonings; but all upon the actual operations of the mind. Its laws are suggested by facts and are verified by facts. It sets out, as Bacon recommends, with the necessary “rejections and exclusions,” with what Whewell calls the “decomposition of facts,” but all to get at the exact facts it means to examine. Its generalizations are formed by observing the points in which the operations of the mind agree, and it proceeds gradually,—*gradatim*, as Bacon expresses it,—rising from particulars to generals, and from lower to higher laws. It is afraid of rapid and high speculation, lest it carry us like a balloon, not into the heavens, but a cloud, where it will explode sooner or later. It is suspicious of long and complicated ratiocinations like those of Spinoza and Hegel, for it is sure—such is human fallibility—that there will lurk in them some error or defect

in the premise, or some oversight or weak link in the process, weakening the whole chain. Thomas Reid was not sure whether Samuel Clarke's demonstration of the existence of God was more distinguished for ingenuity than sublimity.

II. *It observes the operations of the mind by the inner sense—that is, consciousness.* In this philosophy consciousness, the perception of self in its various states, comes into greater prominence than it had ever done before. Bacon did not appreciate its importance; he recommended in the study of the human mind the gathering of instances, to be arranged in tables, of memory, judgment, and the like. Descartes appealed to consciousness, but only to get a principle such as *cogito*, to be used in deduction, *ergo sum*; in which *sum* there is an idea of an infinite, a perfect. Locke was ever appealing to internal observation, but it was to support a preconceived theory that all our ideas are derived from sensation and reflection. Turnbull and Hutcheson and Reid were the first to avow and declare that the laws of the human mind were to be discovered only by internal observation, and that mental philosophy consisted solely in the construction of these. They held that consciousness, the internal sense, was as much to be trusted as the external senses; and that as we can form a natural philosophy out of the facts furnished by the one, we can construct a mental philosophy by the facts furnished by the other. They held resolutely that the eye cannot see our thoughts and feelings even when aided by the microscope or telescope. They were sure that no man ever grasped an idea by his muscular power, tasted the beauty of a rose or lily, smelt an emotion, or heard the writhings of the conviction of conscience. But they thought that the mind could observe the world within by consciousness more directly and quite as accurately as it could observe the world without

by sight, touch, and the other senses, and could in the one case as in the other make a scientific arrangement of its observations and construct a science.

III. *By observation principles are discovered which are above observation, universal and eternal.* All the genuine masters and followers proceed on this principle, and apply it more or less successfully. I am not sure that they have expressly avowed it and explicitly stated it. I am responsible for the form which is given it at the head of this paragraph. No man can understand or appreciate or do justice to the philosophy of Scotland who does not notice it as running through and through their whole investigations and conclusions. It was in this way that Reid opposed Hume. It was in this way that Dugald Stewart, and indeed the whole school, sought to lay a foundation on which all truth might be built. They were fond of representing the principles as fundamental, and they guarded against all erroneous, against all extravagant and defective statements and applications of them, by insisting that they be shown to be in the constitution of the mind, and that their nature be ascertained before they are employed in speculation of any kind. By insisting on this restriction, their mode of procedure has been described as timid, and their results as mean and poor, by those speculators who assume a principle without a previous induction, and mount up with it, wishing to reach the sky, but stayed in the clouds. By thus holding that there are truths above and prior to our observation of them, they claim and have a place in the brotherhood of our higher philosophers, such as Plato and Aristotle in ancient times, Descartes, Leibnitz, and Kant in modern times.

They present these principles in the mind under various aspects and in different names. Reid called them principles of common sense in the mind itself, and common to all

men. Hamilton defended the use of the phrase common sense. I am not sure it is the best one, as it includes two meanings: one, good sense, of mighty use in the practical affairs of life; and the other, first principles in the minds of all men, in which latter sense alone it can be legitimately employed in philosophy. He also calls them, happily, reason in the first degree, which discerns truth at once, as distinguished from reason in the second degree, which discovers truth by arguing. Stewart represented them as "fundamental laws of human thought and belief," and is commended for this by Sir James Mackintosh, who is so far a member of the school. Thomas Brown represented them as intuitions, a phrase I am fond of, as it presents the mind as looking into the nature of things. Perhaps the phrase "intuitive reason," used by Milton when he talks of "reason intuitive and discursive," might be as good a phrase as any by which to designate these primary principles. Hamilton, who sought to add the philosophy of Kant to that of Reid, often without his being able to make them cohere, sometimes uses the Scotch phrases, and at other times the favorite Kantian designation, *à priori*. I remember how Dr. Chalmers, who was truly of the Scottish school, was delighted in his advanced years, on becoming acquainted with the German philosophy through Morell's *History of Philosophy*, to find that there was a wonderful correspondence between the *à priori* principles of Kant and the fundamental laws of Stewart.

I may be allowed to add, that having before me the views and the nomenclature of all who hold by these primary principles, I have ventured to specify their characteristics, and this in the proper order:

First, they look at things external and internal. They are not forms or laws in the mind apart from things.

They are intuitions of things. Under this view they are SELF-EVIDENT, which is their first mark. The truth is perceived at once by looking at things. I perceive self within and body without by barely looking at them. I discover that two straight lines cannot enclose a space, that benevolence is good, that cruelty is evil, by simply contemplating the things. *Secondly*, they are NECESSARY. This I hold with Aristotle, Leibnitz, Kant, and most profound thinkers. Being self-evident, we must hold them, and cannot be made to think or believe otherwise. *Thirdly*, they are UNIVERSAL, being entertained by all men.

But it is asked, How do you reconcile your one element with the other—your observation with your truth anterior to observation? I do hold with the whole genuine Scottish school, that there are principles in the mind called common sense, primary reason, intuition, prior to and independent of our observation of them. But I also hold, and this in perfect consistency, that it is by observation we discover them, that they exist, and what they are. I have found it difficult to make some people understand and fall in with this distinction. Historians and critics of philosophy are apt to divide all philosophies into two grand schools, the *à priori* and *à posteriori*, or in other words, the rational and the experiential. They are utterly averse to call in a third school, which would disturb all their classifications, and thus trouble them, and require the authors among them, especially the followers of Kant or Cousin, to rewrite all they have written. They do not know very well what to make of the Scottish school, and I may add of the great body of American thinkers, who will not just fall into either one or other of their grand trunk-divisions. In particular, when they condescend to notice the author of this paper they feel as if

they do not know what to make of him. "Are you," they ask, "of the *à posteriori* or empirical school? You seem as if you are so, you are so constantly appealing to facts and experience. If so, you have no right to appeal to or call in *à priori* principles, which can never be established by a limited observation. But you are inconsistently ever bringing in necessary and universal principles, such as those of cause and effect, and moral good." Or they attack me at the other horn of the dilemma. "You hold rather by *à priori* principles; you are ever falling back on principles, self-evident, necessary, and universal, on personality, on identity, on substance and quality, causation, on the good and the infinite." I have sometimes felt as if I were placed between two contending armies, exposed to the fire of both. Yet I believe I am able to keep and defend my position. Now I direct a shot at the one side, say at John S. Mill, and at other times a shot at the other side, say at Kant—not venturing to attack Hegel, who is in a region which my weapons can never reach. They pay little attention to me, being so engrossed with fighting each other. But I do cherish the hope that when each of the sides finds it impossible to extinguish the other they may become weary of the fight, look for the *juste milieu*, and turn a favorable look toward the independent place which the Scotch and the great body of the Americans who think on these subjects are occupying. We invite you to throw down your arms, and come up to the peaceful height which we occupy. Hither you may bring all the wealth you have laid up in your separate positions, and here it will be safe. You have here primitive rocks strong and deep as the granite on which to rest it, and here you may add to it riches gathered from as wide regions as your ken can reach, and establish a city which can never be moved or shaken.

A CRITICISM

OF

THE CRITICAL PHILOSOPHY

BY

JAMES MCCOSH, D.D., LL.D., D.L.

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THOUGHT" (A TREATISE ON LOGIC), "EMOTIONS," &c.

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BIOGRAPHICAL NOTE.

IN this work, which is a criticism of Kant's Philosophy, there is no need of giving a detailed account of his life. The biographies of him are now numerous and accessible.¹

He was born at Königsberg, in Eastern Prussia, toward the Polish border, April 22, 1724. His father, a saddler, was of Scotch descent from some emigrant, who had gone over to Memel, probably from Forfarshire, on the east coast of Scotland, where I have noticed the name Cant (changed in German into Kant), often occurring on tombstones in the parish church-yards, and in old records some of which show that there were Cants engaged in the working of leather. His mother, whom he unfortunately lost at the age of thirteen, was a woman of fervent piety, and the family attended a church where the evangelical faith was preached. At the age of sixteen he entered the university of his native town, and for six years he was employed in the Faculty of Arts and Sciences in going over the branches belonging to the Department of Philosophy. His father having died in 1746 he was thrown on his own resources, and had a hard enough struggle. For a time he was tutor in a private family and from 1755 to 1770 he was *Privat-Docent* in the University of Königsberg, where he taught Logic, Ethics, and Physical Geography, in the last of which he always felt a special interest. He early showed a taste and talent for mathematics and physics, but

¹ We have a clear account of Kant's simple and retired Life in Wallace's "*Kant*," in *Philosophic Classics*; a graphic account in Sterling's *Text-Book to Kant*; and a full account in *Stuckenberg's Life of Immanuel Kant*.

in the end philosophy became his favorite study. In the years from 1760–65 he became acquainted with the philosophy of Shaftesbury, Hutcheson, and Hume, and this gave a new turn to his thoughts.

From 1762 to 1765 he published a number of important works:—*The false subtlety of the Four Syllogistic Figures; An attempt to introduce into Philosophy the Conception of Negative Quantities; Only Possible Argument for demonstrating God's Excellence; Observations on the Feeling of the Beautiful and Sublime; and Inquiry into the Clearness of the Principles of Natural Theology and Morals.* During this period he anticipated Laplace in his famous theory of the formation of worlds from star-dust.

In 1770 he was made full professor, with a salary in the end of about a hundred pounds sterling, and henceforth he devoted himself to the teaching of logic and metaphysics, and the construction of his philosophic system. His introductory lecture was on *The Form and Principles of the Sense World, and the World Intellectual.* In 1781, at the mature age of 57, he published his great work, *The Kritik of Pure Reason*, in which his avowed aim was a search for the proper method of metaphysics. The book laid hold at once on certain thinking minds, and has ever since had a powerful influence on thought. A second edition was demanded in 1787, and in it he labored particularly in a new Preface to deliver his system from misapprehensions and answer objections.

In 1785, he published *The Foundation for the Metaphysic of Ethics*; and *The Metaphysical Rudiments of Natural Philosophy*; in 1788, *The Kritik of the Practical Reason*, and in 1790 *The Kritik of the Judgment*, in his old age, *Religion within the Boundaries of Pure Reason.*

His biographers all describe his person and his simple

bachelor habits. He was scarcely five feet in height, and, strange as it may seem, had a very small brain. Every morning about five minutes before five his servant Lampe, an old soldier, entered his confined and darkened bedroom with the cry, "It is time," and his master rose immediately and took a cup of tea and a pipe of tobacco. Till seven he prepared his lecture and delivered it between seven and nine. For the rest of the forenoon he gave himself to his literary work, in which he wrote laboriously, and read the works he could procure in that remote city. At a quarter to one, he called out, "It is three quarters," and sat down to a simple meal with a little liquor, and always with a few, from two to six, invited guests. The dinner, with the conversation, which ranged over almost every subject except metaphysics, lasted till four, when he went out to his constitutional walk, still shown to all who visit Königsberg. In this walk he commonly distributed alms to some beggars who waited for him. Returning to his room, he revolved his philosophy in his mind till about half-past nine, when he retired to his couch, covering his head with the blankets, and taking pains to breathe only through his nose, which he thought prolonged life.

In all his writings he takes an attitude of profound reverence toward religion and its fundamental truths, of God, good, and immortality. After the spirit of his age, he was a rationalist, subjecting all the doctrines of religion to the dictates of reason. He does not seem to have gone to the worship of God in any church. He was annoyed in his declining life by Fichte, who had been at one time his pupil, carrying out the principles which his master had laid down to prove idealism. As his years advanced his faculties began to decay, and he scarcely understood the system which he had so carefully elaborated. He died February 12, 1804.

THE HISTORY OF THE

REIGN OF

CHARLES THE FIRST

BY

JOHN BURNET

OF

THE UNIVERSITY OF OXFORD

IN TWO VOLUMES

LONDON

Printed by J. Streater, at the Sign of the Gun, in St. Dunstons Church-yard

1704

By Authority

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By Authority

A CRITICISM OF THE CRITICAL PHILOSOPHY.¹

LOCKE was the most influential metaphysician of last century; Kant is the most influential metaphysician of this.

Locke's great work, "An Essay on Human Understanding," published in 1690, came into notice immediately. The age was ripe for it. Younger men, rejoicing in the advance of physical science, were becoming wearied of the logical forms of the schoolmen which had kept their hold till the close of the sixteenth century, and of the abstract metaphysical discussions which still prevailed in the seventeenth century. Locke met the want of his age. His fresh observational spirit, his shrewdness and sagacity, his independence, and his very phraseology, which carefully avoided all

¹ I had an article in the *Princeton Review* Nov. 1878, entitled *A Criticism of the Critical Philosophy*. Prof. Sidgwick has stolen my brand by giving the same title to his very acute articles in *MIND*, beginning 1883. I am quite willing that he should use the title, and I refer to his employment of it simply in order to claim that I have a right to my own property which I acquired by a prior possession. Kant seems to me to have reached the climax of his influence at his centenary in 1881. These papers of Dr. Sidgwick's are an indication that Kant will now have to undergo a searching criticism, such as Locke was subjected to, at the end of last century and the beginning of this. It is clear that Dr. Stirling is about to start a rebellion against Kant in favor of realism. I may be allowed to express a hope that Dr. Sidgwick and his friend Mr. Balfour having filled the air with doubts and difficulties, will now show as much acuteness in defending truth as they have done in opposing error. Unless they do so the tendency of their philosophy, following the spirit of the times, will be toward an agnosticism which they do not mean to support.

hack and technical phrases, recommended him to the rising generation. He called attention to internal facts, even as Bacon and Newton had to external; and if he did not himself notice and unfold all the delicate operations of our wondrous nature, he showed men where to find them. But philosophy, like faith—as the great Teacher said, like physical science—as Bacon showed, is to be tried by (not valued for) its fruits. The influence exerted by him has been and is of a healthy character. But there were serious oversights and even fatal errors in his principles; and these came out to view in the systems which claimed to proceed from him—in the sensationalism of Condillac, the idealism of Berkeley, and the scepticism of Hume.

By the second half of the eighteenth century thoughtful minds began to see the need of a reaction against the extreme experientialism which had culminated in the Scottish sceptic; and there appeared two great defenders of fundamental truth—Reid in Scotland (1764) reaching in his influence over his own country, over France, and over the United States; and Kant in Germany (1781) laying firm hold of his own land, and then passing over into France, Britain, and America, and latterly penetrating into Scandinavia, Greece, Italy, and Spain. Kant's power, like Locke's, has been on the whole for good. He has established fundamental mental and moral principles, which are seen to be fixed forever. He has taken us up into a region of grand ideals, where poetry, led by Schiller and Goethe, has revelled ever since. But there were mistakes in the philosophy of Kant as well as in that of Locke. These have come out like the dark shadow of an eclipse in the idealism of Fichte, the speculative web woven by Hegel, and in the relativity and nescience theories elaborated by Hamilton and applied by Herbert Spencer. Our errors as well as our sins will find us out. Providence allows specu-

lative mistakes to go on to a *reductio ad absurdum*, and the exposure corrects them. There is need of a rebellion against Kant's despotic authority; or rather of a candid and careful examination of his peculiar tenets, with the view of retaining what is true and expelling what is false. This is the more needed, as all the agnostics and the materialistic psychologists when pushed fall back on Kant. Prof. Mahaffy acknowledges,¹ "Of late the Darwinists, the great apostles of positivism, and the deadly enemies of metaphysics, have declared that he alone of the philosophers is worthy of study, and to him alone was vouchsafed a foreglimpse of true science." I believe that we can not meet the prevailing doctrine of agnostics till we expel Kant's nescient theory of knowledge, and that it is as necessary in this century to be rid of the *Forms* of Kant as it was in the last of the *Ideas* of Locke, both being officious intermeddlers, coming between us and things.

I wish it to be understood that I do not mean to disparage the great German metaphysician. I place him on the same high level as Plato and Aristotle in ancient times, and as Bacon and Descartes, Locke and Leibnitz, Reid and Hamilton in modern times. His logical power of ordination

¹ I may mention that in an article in the *Princeton Review* for January, 1878, I ventured on a short criticism of Kant. It was meant to be a challenge. It called forth an able champion in Prof. Mahaffy, who wrote a criticism in the same *Review* for July, 1878, to which I replied in an article for November, 1878, referred to in last note. I am not to carry on the controversy in this paper, but I may occasionally use the remarks I then made. Dr. Mahaffy has studied Kant profoundly, and has written valuable fragmentary volumes which I hope he may complete, and thus give us fully his view of the Critical Philosophy. The University of Dublin, of which he is so distinguished a member, having for nearly a century and a half followed Locke, seems in this last age to have gone over to Locke's great rival, Immanuel Kant.

and division is not surpassed by that of Saint Thomas, the Angelical Doctor, or the greatest of the schoolmen. He did immeasurable good by counteracting the sensationalism which was coming in like a flood in France under the influence of Condillac, of Voltaire, and the encyclopedists. He accomplished this in the right manner (so far) by showing that there are other and deeper principles in the mind than sensations and transformed sensations. He did a like service to philosophy by resisting the undermining process of Hume, who proposed to carry out to its legitimate consequences the experimental method of Locke, and landed in scepticism. He effected this by showing that there are in the mind profound laws, or forms, which are prior to experience and independent of it. He carries out his principles in a proper way and proposes to give us an inventory of what is *à priori* in the mind: "For this science (of metaphysics) is nothing more than an inventory of all that is given by pure reason, systematically arranged" (First Preface).¹ These dicta of reason had been appealed to constantly by the school of dogmatists, but there had been no careful inquiry into their nature, and their mode of operation. Kant did great good by attempting an arrangement of them—though I believe the system which he constructed was far from being successful. He introduced clearness and definiteness into metaphysics by drawing the famous distinction—of which there had been previously only vague anticipations—between analytic and synthetic judgments, the former simply evolving in the proposition what is involved in the subject, as when we say that "an island is surrounded with water," and the latter involving something more, as when we say, "Sicily is an island in the

¹ Except when stated otherwise I use Meiklejohn's Translation in Bohn's Library.

Mediterranean." Farther on I may have something to say about these synthetic judgments; but I think he is right in maintaining that the problem of the possibility and existence of metaphysics depends on the circumstance that there is in the mind a capacity of pronouncing judgments embracing more than is in the subject, and that there are such judgments *à priori*, as that every effect has a cause. His classification in the categories of the relations which the mind can discover is taken largely from Aristotle and the scholastic logicians, and contains a considerable amount of truth, and should be carefully weighed by all who would construct a logic.

He has laid a deep and immovable foundation for ethics in the Practical Reason, and his phrase, "the Categorical Imperative," has always appeared to me to be the most expressive ever employed to designate the office of the conscience. We should also be grateful to him for his defence of the freedom of the will. These are only the chief of the high excellences which I find in the Kantian philosophy which sets before youth a high ideal, intellectual and moral. The grand principles which he has expounded and defended must have a place (it may be a somewhat different place from that which he has allotted to them) in every system of high philosophy.

But, while he has thus been powerfully promoting the cause of truth, it may be doubted whether he has given the correct account of fundamental principles. He was more distinguished as a logical thinker and systematizer than a careful observer of what actually passes in the mind. His system, as a whole, seems to me not to be a natural one—that is, according to nature—but an artificial one, constructed by a powerful intellect. He has shown amazing dexterity and skill in forming his system, in supporting it by buttresses where it is weak, and defending it against

attacks. He has certainly raised a massive structure, with imposing bulwarks; but, in these times, people trust more in earthworks than in stone castles, which are exposed to attack from their height; and I believe the time is at hand when we shall have a philosophy of a lowlier but surer kind, based on the facts of our mental nature, carefully observed.

In the examination which I am to undertake I am not to proceed on any disputed points in Kant's writings. I look only to the broad features of his philosophy, as seen both by those who approve of and those who oppose him. My criticisms are all advanced on what is admitted by all his disciples and interpreters. I do not mean to inquire whether, as some maintain, there is an inconsistency between the Preface to the second edition and the first edition; or what he means by the "I think" which he represents as running through all the exercises of the *à priori* reason, and what we are to understand by the *schematismus* and the "*à priori* imagination." On some of these points I have views which I may intimate as I advance. But there are others far better fitted than I am to discuss these subjects, and my criticism does not apply to any controverted doctrine. My objections are directed against deeper and more essential parts of his philosophy on which all are agreed as to his meaning. I object to three fundamental positions of Kant.

I.

I OBJECT TO HIS CRITICAL METHOD.

It seems that in the school of Wolff, in which he was trained, he was led, first, to favor the Dogmatic method of Descartes and Leibnitz. But the inquiring spirit of the

times and his own reflection convinced him that this method was very unsatisfactory, as each man or school had set out with his or its own dogma, and people were now unwilling to accept, on any authority, dogmas which had not been sifted by an accredited test. Following the manner of the matter-of-fact age, he then turned to the "empiricism," as he calls it, of the "celebrated Locke." But he drew back when he saw what consequences were drawn from it by Hume.¹ Dissatisfied with these methods, he elaborated, expounded, and illustrated a method of his own—the Critical Method.

There may be a legitimate use of each of these methods if it is kept within proper limits. All inquirers have to assume something, which may be called a dogma; but they must be ready to show grounds for making the assumption. A narrow empiricism may miss, as certainly Locke did, some of the deepest principles of the mind; may not notice first or intuitive principles. There is need of a criticism to distinguish things which are apt to be confounded in hasty assumptions and generalizations. But surely the true method in all sciences which have to do with facts, as I hold that all the mental sciences have, is the inductive, care being taken to understand and properly use it.

The agent, the instrument, the eye, the sense employed in the induction of the facts, is self-consciousness. By it we notice the operations of the mind, directly those of our own minds, and indirectly those of others as exhibited in their words, writings, and deeds. What we thus notice is

¹ It does not appear that Kant ever read Hume's first and greatest work, *The Treatise of Human Nature*; but he was acquainted in a translation with the *Enquiry into the Human Understanding*, which was a second form of the first, and translated into German by Sulzer, 1755, and also with a translation of some of the Essays into which Hume broke down his greater works.

singular and concrete, like the facts perceived by the external senses. But we may proceed to abstract and generalize upon what we observe, and in this way discover laws which are to be regarded as the laws of our mental nature. In pursuing the methods we find laws or principles which are fundamental and necessary. Aristotle called them first truths; others have called them by other names: Kant designates them as *à priori* principles, and represents them as pronouncing synthetic judgments *à priori*. I hold that they perceive objects and truths directly and immediately, and hence may be called intuitions. They act prior to our observation of them; they act whether we observe them or not. It is the business of the metaphysician to look at their working, to determine their exact nature, their rule of action, and the authority which they claim. His inspection of them does not make them operate, or determine their mode of operation. He can watch them because they act and as they act, and his special business is to determine their laws. When he has done so he has found a metaphysical, what indeed may be regarded as a philosophical, principle. A system or systematized arrangement of such principles constitutes metaphysics or mental philosophy.

Kant was altogether right in saying that the end aimed at in metaphysics is to furnish an "inventory" or "compendium" of *à priori* principles. But he proceeded to attain this end in a wrong way—by the method of Criticism. Surely criticism must proceed on acknowledged rules or tests. On what principles does Kant's criticism proceed? Kant answers, "Pure speculative reason has this peculiarity, that in choosing the various objects of thought it is able to define the limits of its own faculties, and even to give a complete enumeration of the possible modes of proposing problems to itself, and thus to stretch out the entire system of metaphysics" (Pref. to 2d Edition). But must

there not in that case be a prior criticism of reason to find out whether it can do this? And must not this criticism imply a previous one from higher principles *ad infinitum*? Certain it is that from the time of Kant we have had a succession of critical philosophies, each professing to go deeper down than its predecessors, or to overtop them. Fortunately—I should rather say wisely—Kant takes the forms of common logic, which are so well founded, as his criticising principles, and has thus secured valuable truth and much systematic consistency; only, these forms have helped to keep him from realities.

Professor Mahaffy asks with amazement whether we are to accept without criticism the saws of the common people, or the dogmas of speculators—no one of whom agrees with his neighbor. To this I reply that it has always been understood that there is criticism in the inductive method. Bacon would have us begin induction with the “necessary rejections and exclusions.” Whately and logicians generally speak of the necessity of “analysis,” and Whewell enjoins “the decomposition of facts.” But this analysis, or criticism, if you choose to call it so, must be applied to facts, in the case of mental science as made known by internal observation. It must aim at separating the complexity of facts as they present themselves, and this in order to discover the law of each of the elements, and to keep us from making assertions of one of these which are true only of another, and of the whole what are true only of some of the parts. Our aim in metaphysics is to discover what truths are intuitively known, and for this purpose we must distinguish them from their concomitants, in particular from all mere contingent or empirical truths. All professed metaphysical principles are attempted generalizations of our intuitive perceptions and judgments. But these generalizations are in the first instance apt to be crude, by

reason of mixing up other things with primitive intuitions. Even in more advanced stages of philosophy metaphysicians are apt to lay down imperfect and mutilated principles to support their theories. There is therefore need of a criticism to distinguish things that differ, but which are mixed together in experience, or are put in one category by system builders. But in our examination we are not to put ourselves above the facts. We must be at special pains not to override or mutilate them, still less to twist or torture them. Our single aim should be to apprehend and express them accurately, and to apply them only to the objects on which they bear. Kant speaks (Pref. to 2d Edition) of "purifying the *à priori* principles by criticism"; whereas the proper office of the metaphysician is simply to discover what they are, and to formulate them without addition or diminution.

It is not to be understood that our observation of them, of these first principles, gives them their being, and still less that it gives them their authority. Our notice of them does not give them existence. We notice them because they exist. By observation we can discover that they exist, and find the extent and limits of their jurisdiction and authority. Truth is truth, whether we observe it or no. Still, observation has its place, and without a very careful induction, metaphysics are sure to be nothing else than a system of arbitrary dogmas. The induction does not give them their title. They have their authority in themselves, but observation makes their title known to us. Kant is constantly asserting that metaphysics are independent of the teaching of experience, and that they must not call in experience. They are independent of experience as that mountain is independent of my eye. Still, it is only by my eye that I can see the mountain.

A metaphysical philosophy can be constructed only by

the induction of the operations of our intuitions. We can give the marks and tests of these intuitions. Their primary and essential character is not necessity, as Leibnitz held; nor necessity and universality, as Kant maintained; but self-evidence: they look immediately on things, and contain their evidence within themselves. Being so, they become necessary, that is, have a necessity of conviction, which is the secondary test, and universal—that is, entertained by all men, which is their tertiary corroboration. ?

After, but not till after, having discovered and co-ordinated intuitive principles, we may then, if we are determined, inquire whether they are to be trusted. Such an investigation can not, I fear, be very fruit-bearing; the result must be mainly negative. It is an attempt to dig beneath the ground on which the building rests, to fly above the air. Still, by such a process we may be able to show that our intuitions confirm each other, and thus yield not a primary, but a secondary or reflected, evidence of their trustworthiness. It can also be shown that they do not contradict each other; that there is nothing in them to countenance the alleged antinomies of Kant, Hegel, Hamilton, or Spencer, all of which are contradictions, not in things or our intuitive convictions, but simply in the mutilated propositions drawn out by these men. But in the first and last resort we are to rest on the circumstance that these first principles are of the nature of intuitions looking directly on things. As this is the first, so it is also the strongest evidence that the mind can have. It is the strongest which it can conceive itself to have. When it has this it is always satisfied, and it does not seek anything more; and if more be offered, it will be felt to be a superfluity, and if it be pressed, it will be apt to resent it as insult.

II.

I OBJECT TO KANT'S PHENOMENAL THEORY OF
PRIMITIVE KNOWLEDGE.

Hume opens his Treatise of Human Nature: "All the perceptions of the human mind resolve themselves into two distinct kinds, which I call impressions and ideas." The difference between these consists in the greater liveliness of the impressions. Under impressions he includes such heterogeneous mental states as sensations, perceptions, emotions, and I should suppose resolutions. Under ideas he has memory, imagination (often as lively as sensation), judgment, reasoning, moral convictions, all massed together.

Kant's aim was to meet the great sceptic. In doing so he wished to make as few assumptions as possible. Let us assume, he virtually says, what no one can deny. Hume had said, "As long as we confine our speculations to the *appearances* of objects to our senses, without entering into disquisitions concerning their real nature and operations, we are safe from all difficulties." At this point Kant starts: Let us assume the existence of *appearances*—Hume's very words; of *Erscheinungen*, of *Eindrücke*—that is, impressions. This is his first and perhaps his greatest mistake.

Kant, as it appears to me, should have met Hume's very first positions. The mind does not begin with impressions. The word is vague, and in every way objectionable. It signifies a mark made by a harder body, say a seal, upon a softer body, say wax. Taken literally, it implies two bodies—one impressing, the other impressed; applied metaphorically, it indicates a body to impress and a mind impressed. As applied to our perceptions by consciousness, say of self as thinking, and our purely mental acts, as our

idea of moral good, it has and can have no meaning for there is nothing without impressing, and the operation has nothing whatever of the nature of an impression. Kant should have met these primary positions. But he concedes them. In doing so he has broken down his walls of defence, and admitted the horse fashioned by the deceit of the enemy, and is never able to expel him or counteract the evil which he works.

An impression, if it means any thing, means a thing impressed. An appearance, if we understand it, means a thing appearing, and it seems to imply a being to whom it appears. An impression without a thing impressed is an abstraction from a thing impressed. An appearance is an abstraction from a thing appearing. As all abstractions imply a concrete thing from which they are taken, so all appearances imply a thing known as appearing. In physics a phenomenon means a thing, a reality presented, to be referred to a law.

It has been commonly allowed, since the days of Locke, that man's two original inlets of knowledge are sensation or sense-perception, and reflection or self-consciousness. Kant speaks everywhere of an outer and an inner sense. Now, I hold that by both of these we know things. By sense-perception we know our bodies and bodies beyond them; and Kant says correctly, "Extension and impenetrability together constitute our conception of matter" (Trans., p. 379). There may be disputes difficult to settle—as what are our original and what our acquired sense-perceptions, whether of our bodily frame or of it with objects affecting it; but our acquired imply original perceptions, and both in the first instance and in the last resort contemplate objects as extended, and exercising some sort of energy. It is, if possible, still more emphatically true that self-consciousness reveals not mere appearance, but self as a thing, say as thinking or feeling.

But what, it may be asked, is the proof of this? To this I answer, first, as an *argumentum ad hominem*, that we have the same proof of it as we have of the impression, of the presentation, of the phenomenon. Whatever those who hold these slippery theories appeal to, I also appeal to; and I am sure that the tribunal must decide in my behalf. I have the same evidence of the existence of a thing impressed as I have of the impression, of the thing appearing as I have of the appearance. But secondly, and positively, the position I hold can stand the tests of intuition. It is self-evident; we perceive the very things, say the nostrils as affected, or self as reasoning. We do not need mediate proof; we have immediate. It is also necessary: I can not be made to believe otherwise that I do not exist, or that there is no body resisting my energy. It is, farther, universal, as admitting no exceptions, and as being held by all men, young and old, savage and civilized. It can thus stand the tests used by Kant, which are the two last.

Let us now turn to the account given by Kant. According to him, we know mere appearance; and his definition is, "the undetermined object of an empirical intuition is called an appearance or phenomenon." Speaking of the rainbow, "not only are the rain-drops mere phenomena, but even their circular form, nay, the space itself through which they fall, is nothing in itself, but both are mere modifications or fundamental dispositions of our sensuous intuition, while the transcendental object remains for us utterly unknown" (Trans., p. 38). This is his account not merely of material objects, but of space, time, and self. "Time and space, with all phenomena therein, are not in themselves things. They are nothing but representations, and can not exist out of and apart from the mind. Nay, the sensuous internal intuition of the mind (as the object of consciousness), the determination of which is represented

by the succession of different states in time, is not the real proper self as it exists in itself, not the transcendental subject, but only a phenomenon which is presented to the sensibility of this, to us, unknown being" (Trans., p. 307).

Professor Mahaffy calls on me to define what I mean by *thing*. I answer that it is one of those simple objects which according to all logicians can not be logically defined; not because we do not know it, but because we know it at once, and can not find anything simpler or clearer by which to explain it. All that we can do positively is to say that *it* is what we know it to be; or to express it in synonymous phrases, and call it a being or an existence. But we may, as logicians allow in such cases, lay down some negative propositions to face misapprehensions, and to distinguish *it* from other things with which it may be confounded. 1. *It* is not an abstract or general knowledge, say of a τὸ ὅν or essence or being; or of a quality, say form or thought; or of a maxim, say that a property implies a substance. Our primary knowledge is in no sense a science, which is knowledge systematized. But the knowledge thus arranged is real knowledge, and because it is so, science is to be regarded as dealing with realities, and gives no sanction to agnostics or nihilism. 2. This thing is not a mere appearance. What appears may be known very vaguely—it may be a cloud, a shadow, or the image of a tree in a river. Still it is a reality—that is, a real thing; it consists of drops of moisture, of a surface deprived of light, or of a reflection. 3. Man's primary perception is not of a relation between objects, but of objects themselves. When I see a round body I see it as a round body. I may also be conscious of myself as perceiving it. Having these two objects I may discover a relation between them, and find that the round body affects me. But I first know the round body and the self, and as ex-

isting independent of each other. The round body may be seen by others as well as me, and the self may next instant be contemplating a square body. Holding by these positions we are delivered from both the phenomenal and relative theories of knowledge of body and mind, and find that we have real things, between which we may discover relations which are also real. A relation without things has always appeared to me to be like a bridge with nothing to lean on at either end.

The thing which I thus posit is, I admit, not the same as that of which Kant speaks. We are told that Kant had two kinds of sensible knowledge—things as phenomena, and things *per se*. I have been asserting that we know more than phenomena. I allow that what I assume is not the thing in itself—the *Ding an sich*, as Kant expresses it; the thing *per se*, as Mahaffy translates it. I confess that I do not understand what is meant to be denoted by this phrase, which seems to me to be of a misleading character, as seeming to have a profound meaning when it has no meaning at all. If I have the thing, I do not care about having the *in itself*, as an addition—if, indeed, it be an addition. It is enough for me that I know the thing, the very thing, and I may wish to know more of the thing; and this I may be able to do, but only by making additions in the same way as I have acquired my primary knowledge. As to *the thing in itself*, it always reminds of the whale that swallowed itself.

I do believe that Kant, like Locke, wished to be a realist, but both had great difficulty in getting a footing on *terra firma*; Locke by making the mind perceive only ideas, and Kant because he made it perceive phenomena, which are only a more fugitive form of ideas. He opposes idealism, and maintains that the internal implies the existence of the external—by a very doubtful argument, as it appears to

me, unless we give the internal the power of knowing the external. He is quite sure that there is a *thing*, a *Ding an sich*. But then he admits that we can never reach it, can never catch it. The thing does exist, but then it is a thing unknown and unknowable, and we land ourselves in contradiction if we suppose that we know it. Kant is thus the true founder and Hamilton the supporter (both without meaning it), and Herbert Spencer the builder of the doctrine of nescience or agnostics, underlying so much of the philosophic and physical speculation of the present day.

We can avoid these consequences only by making the mind begin with a reality. If we do not begin with it we can not end with it. If we do not assume it we can not infer it. "How can we reason but from what we know?" And if there be not knowledge and fact in the premises, we can not, as Kant knew well, have it in the conclusion without a gross paralogism.

Kant holds that the mind has the power of Perception, of *Anschauung*. But let us carefully note what this Perception is. He argues that there is a thing, a thing in itself without the mind, but this is unknown and unknowable, and is known simply by what it produces in the mind. In the perception itself there is both an *à priori* and an *à posteriori* element—a sensation of color, or feeling, or taste caused from without, but perceived under the form of space in the mind. Now all these are in the mind itself. I may quote from *The Reproduction in the Text-Book to Kant* by Dr. Stirling, who surely understands his author: "We know only our own affections. What we call things are only these affections themselves variously combined, manipulated, and placed." "All our knowledge consists of two factors and both are subjective." "We have always to recollect that what we call things are but aggregates of our own sensations and nothing really

without." This is true even of space and time. "Whether we look on space or time, it is only our own states we know in either" (p. 42). This seems to me to be a very artificial and altogether a very unnatural account of perception—a process of which we are all conscious. It certainly takes us away altogether from external things and issues logically in agnosticism.

I am aware that in maintaining the reality of things within and without we have to draw certain distinctions. There is the distinction between our original and acquired perceptions. It is only in the first of these that we know the thing directly; the others we know only by a process of gathered experience in which error may creep in. We now know approximately what are our original perceptions by the various senses. By the eye we know primarily only a colored surface. By the muscular sense we know bodies as solid or impenetrable. By the senses of taste, smell, and feeling we seem to know only our organism as affected. These distinctions were unknown to Kant and his immediate followers, and have only been revealed to us by the experiments wrought on the senses, such as those of Chiselden and Franz, showing that we do not know distance by the eye. *But Berkeley!*

It may be noticed, also, that in the school of Kant there is not so much attention paid as in the school of Locke and Reid to the distinction often ill-expressed between the Primary and Secondary Qualities of Matter. The Primary are such as extension and potency, found in all bodies, whereas the Secondary are organic affections, such as colors, heat, sounds, tastes, implying an external cause. Thus heat is felt as an affection of the bodily frame, but it has a cause in molecular motion. Carrying these distinctions with us, we can and should maintain that in our original sense-perceptions we know matter and its primary qualities directly and immediately.

III.

I OBJECT TO KANT'S IDEAL DOCTRINE OF THE MIND IMPOSING FORMS ON THINGS APPEARING.

This error connects itself with the previous ones. Man is supposed to perceive not things, but appearances, and he calls in forms to give unity to scattered appearances. These forms are void in themselves; they need a content, and they are applicable to objects of possible experience, but to nothing else. The language is meant to express a truth, but it fails to do so. Would it be correct to represent the law of gravitation, as a form, void in itself, and capable of being applied to matter and its molecules? The correct statement is that gravitation is a property of matter. In like manner, the original endowments of mind are powers in the mind itself, enabling us to know things.

Kant maintains that it must either be the external that determines the internal, or the internal that determines the external. The experientialist makes the external determine the internal, makes the mind simply reflect what passes before it. Kant maintains in opposition that the internal determines the external, and he would thus raise a breakwater in the mind itself against materialism and scepticism. But surely the natural and rational supposition is that the internal perceives (not creates) the external, and it should be added, the internal also. The primitive intellectual exercises of the mind are perceptions looking at things. By sense-perception we perceive external objects in our body or beyond it as they are presented to us, and we know them as extended and resisting our energy. By self-consciousness we know self as thinking, imagining, hating, or loving. These exercises are all singular, but we can generalize them

and thus discover the laws of our perceptions—be it observed, perceptions of things, and not impressions or appearances—and these form an important department of metaphysic, which becomes a positive department of true science, and not a mere police, as Kant would make it, to preserve us from error. We have here in the mind principles which, looking to things, give us fundamental truths.

But Kant gives to these principles not a mere perceptive, but a formative power. Our intuitions are not perceptions, looking at things and the relations of things, but moulds imposing on phenomena what is not in the phenomena. Our primary knowledge thus consists of two elements, one *à posteriori* from experience, the other *à priori* from the stores of the mind.

This may be the appropriate place at which to call attention to the phrases *à priori* and *à posteriori*, so constantly employed in all philosophic works. In the philosophy of Aristotle, by proceeding *à priori* is meant going from cause to effect or from antecedent to consequent; by *à posteriori*, arguing from effect to cause or from consequent to antecedent. Hume occasionally uses the phrases, but gives them a somewhat different signification. By *à priori* he designates what is known, independent of experience; by *à posteriori*, what is gathered by experience. It is in this sense the terms are used by Kant, and in all the philosophies that have ramified from, or been influenced by him. These phrases are so universally used that we can not discard them. But in employing them let us understand what is meant by them. We are not to interpret them as implying that there is *knowledge* or *notions* in the mind prior to experience. Nor are we to use them as implying that the mind in its perceptions gives to the object a quality not in the thing as known.

By *à priori* we denote principles which are in the very

nature and constitution of the mind¹—to use language favored by Butler and the Scottish school. But in some connections the phrase is liable to be misunderstood, and may lead into serious error. It may mean that we are entitled to start with a favorite principle without previously inquiring whether it has a place in the mind, and what is its precise place; and then rear upon it or by it a huge superstructure. I use the phrase as one universally adopted, but I employ it only as I explain it. I denote by it those principles, intellectual and moral, which act in the mind naturally and necessarily. But I do not allow that we can use them in constructing systems till we have first carefully inducted them. I believe in *à priori* laws operating spontaneously in the mind, but I do not believe in an *à priori* science constructed by man. There is a sense indeed in which there may be an *à priori* science—that is, a science composed of the *à priori* principles in the mind. But then they have to be discovered in order to form a science, and their precise nature and mode of operation determined by *à posteriori* inspection. Like the Scottish school, I am suspicious of the lofty systems of ancient, mediæval, and modern times, which have been fashioned by human ingenuity. Acting on this principle, I reject, with the majority of thinking people, and with metaphysicians themselves, more than half the metaphysics that have been constructed. At times I am grateful when I discover a native principle woven into these webs, only considerably twisted. In rejecting these speculations I am not to be charged with rejecting *à priori* truths in the mind. I am simply sceptical of the use that has been made of them by the ingenuity of man. With me, philosophy consists in a body of first

¹They are the REGULATIVE PRINCIPLES spoken of under the Three-fold Aspect of Intuition at the opening of No. V. of this Series.

principles in the mind, carefully observed and expressed. This may be as firm and sure as any system of natural science.

But in employing them, let us understand what we mean by them. We are not to understand them as implying that there is *knowledge* or *notions* in the mind prior to experience. They are to be understood as simply denoting that these laws are in the mind prior to any exercise of them and regulating our exercises, intellectual and moral, and guaranteeing great fundamental truths. Of this description is the law in our mind which leads us to decide that an effect proceeds from a cause.

Here I may remark that there is an ambiguity in the term 'experience,' which has seldom been noticed. It may denote an individual experience or it may signify a gathered experience or induction. In the former sense, everything which passes through the mind is an experience—say the experience of ourselves in pain or of ourselves as knowing and deciding. In this sense every exercise of intuition or of *à priori* reason is an experience. These individual experiences, it is evident, do not reveal anything beyond themselves. But when we talk of experience making known truth we mean a gathered experience or an inductive process leading to a law. It is in this latter sense that we draw the distinction between truth discovered *à priori* and truth discovered by experience or *à posteriori*—the better phrase would be 'inductive experience.'

He admits that there is an *à posteriori* matter furnished by the senses. I confess I have had a difficulty in finding what this *à posteriori* matter is. In the Introduction he tells us what belongs to "sensuous experience,"—"color, hardness or softness, weight, impenetrability, etc." In the opening of the Transcendental *Æsthetic* he gives us as belonging to sensation, "impenetrability, hardness, color," etc. It

is rather strange to find impenetrability here, as it implies both extension and force, which, in his system, are supposed to be imposed *à priori* by the mind itself. This shows in what difficulties he is when he would refer some perceptions to sensation or experience and others to forms in the mind.

But while he holds that we get so much from sensation and experience, he maintains that we have a more important *à priori* element imposed as a form on objects. Phenomena present themselves through the senses as manifold and scattered. I perceive a rose to have unconnected phenomena, as particles, colors, odors, shapes, and the mind combines them into a unity of object. Now, we have to meet Kant at this second point as we have met him at the first. I have been arguing that the mind begins with the knowledge of things existing; and I now affirm that this knowledge is of things in the concrete, of substances with their properties, of body as at once having form and color, of this stone at one and the same time with the form of a cross and of a brown color. The unity is not given to it by the mind, it is in the object, say the rose or stone; but is perceived at once by the senses. At this point he introduces his first ideal element and in doing so he gives an entirely erroneous view of what the senses disclose.

He carried this distinction into every exercise of the senses, there being always an *à posteriori* part but a more powerful *à priori* element imparted by the mind. He uses this latter part as a rock to beat back the waves of scepticism. But in all this, he has, in fact, allowed the entrance of a more subtle scepticism than that of Hume. In all cases the subjective joins on to the objective, and we can not tell what the object as a thing is as distinguished from the subject. For if the formative mind may add one thing, why not two, or ten, or a hundred, till we know not what reality is left us?

Thus we have a door opened for the entrance at one and the same time of idealism and agnosticism ; both of these have, in fact, come in. We have an ideal element contributed by the mind, an element giving no objective reality and an empirical element, implying it may be a reality, which, however, must forever remain unknown. We shall see that higher minds, such as Fichte, Schelling, and Hegel, used the ideal factor and raised imposing structures, of which we are not sure whether they are solid mountains or cloudland. While more earthly minds took the other factor and drove it to an agnosticism which seeks a basis in materialism. Hume said that "if we carry our inquiry beyond the appearances of objects to the senses, I am afraid that most of our conclusions will be full of scepticism and uncertainty." But we have seen that when we make what are commonly regarded as things to be mere appearances, we are certainly landed in these issues with nothing left to deliver us from them.

I have already referred to the distinction between analytic and synthetic judgments, and to the circumstance that metaphysics consist in synthetic judgments *à priori*. I maintain that metaphysics have to look first to things before they compare things, and have to treat of primitive cognitions before they treat of primitive judgments. But so far as judgments are concerned, the distinction is a valid and an important one. But Kant's account is not accurate. There are undoubtedly synthetic judgments *à priori*. But what is their nature? They are not judgments apart from things, they are judgments about things ; that two straight lines can not enclose a space is such a judgment, but it is a judgment about lines. From what we know about straight lines, we perceive and are sure and decide that they can not enclose a space. The same is true of the innumerable other primitive synthetic judgments. Such

are those we pronounce in regard to space and number and time, as that two straight lines which have gone on for an inch without coming nearer each other will go on forever as straight lines without being nearer; that equals added to equals must be equals, and that time is continuous and has no breaks in it; we perceive these propositions to be true from the nature of the things as known to us. Such are all mathematical axioms, and all deep ethical maxims, such as that we should keep our word.

In order to prevent his philosophy from rising into total idealism, he is forever telling us that the forms which he calls in have a meaning only as applied to objects of possible experience. Here, as in so many other cases in Kant's philosophy, there is truth involved, but it is not accurately expressed. What propriety would there be in saying that gravitation has a meaning only when applied to objects of possible experience? The true statement is that gravitation is a law of all material things. So we would say of the primitive judgment of causation that every effect has a cause; that it is not a judgment applicable to all objects of possible experience, but to all objects known to us as real.

I am now to apply these principles in the examination of Kant's "Kritik of Pure Reason" in detail, simply avoiding those topics in which his meaning is disputed. The forms which the mind is supposed to superinduce on objects fall into three classes: I. In *ÆSTHETIC*, that is, the senses, the Forms of Space and Time. II., In *ANALYTIC*, the Categories of Quantity, Quality, Relation, Modality, each including three subdivisions, in all twelve; and III. In *DIALECTIC*, the three Ideas of Substance, Interdependence of Phenomena, and God.

TRANSCENDENTAL ÆSTHETIC.

In treating of the doctrine that the mind knows only appearances, I have indicated my objections to Kant's account of the senses. It keeps us away altogether from things which it is the very object of the senses to make known to us. He maintains resolutely that there is a world existing external to the mind, but on his principles there can be no evidences of this. He left himself no means of meeting his quondam pupil Fichte, when he argued that the mind which could create space and time might also create the objects in space and time; that the mind which could give extension to this ball might give it everything else which it has. This external thing is represented, quite inconsistently with his theory, to be unknown and unknowable. If an appeal be made to sense and experience to testify that the external thing exists, these will testify farther, that we know something of it—in fact, we know it to exist because we know so far what it is.

He tells us that "all intuition possible to us is sensuous" (Trans., p. 90). The word "sensuous" is apt to leave a bad impression, and has, in fact, left such an impression, as it seems to represent all intuition as being of the external senses. But he evidently means to include in the phrase our internal sense or self-consciousness. Both these senses perceive only phenomena. Even self-consciousness gives us nothing more. "The subject intuites itself, not as it would represent itself immediately and spontaneously, but according to the manner in which the mind is internally affected, consequently as it appears, and not as it is" (Trans., p. 41). I may give another passage or two as translated by Mr. Mahaffy: "The internal sense by which the mind intuites its own internal states gives us no intuition of the soul as an object." "Our self-consciousness does not present to us

the ego any more distinctly than our external intuition does to us foreign bodies; we know both only as phenomena." He does not seem to ascribe much to this internal intuition. "The notion of personality though *à priori* is not an intuition at all," but "a logical supposition of thought." At this point, that is, at his account of our internal intuition, our higher British and American metaphysicians are most inclined to leave him.

Kant's whole account of self-consciousness is complicated and confused. Dr. Stirling, in his *Reproduction*, in explaining Kantism, tells us "that inner sense is, as a sense, to be strictly distinguished from self-consciousness or the perception of the ego. The contents of the former are all the transient states of the empirical subject when under sentient feeling; whereas those of the latter are but the simple I, a mere intellectual act; the bare thought, I, I, I, or *I that am here and now thinking* (*das 'ich denke.'*)" We shall see as we advance that he brings in an "I think," which gives a unity to all our thinking. All these are unnatural and perverted accounts of the one thing, self-consciousness, or the internal sense. It is the power which perceives—that is, knows—self in its present state. It runs through all our states, giving us a continuous self, and the various states of self, say, as thinking or willing.

Kant argues that in getting rid of many appearances about what is revealed by the senses, such as color, odor, feeling, we can never put away or get rid of space in the external, or time in the internal sense. These he represents as forms imposed by the mind; space being the form of material, and time of mental phenomena. There is some little foundation of truth in all this, but the statement is, after all, utterly perverse, and it is made to give currency to error. Certainly space is involved in all the exercises of the external senses; but this, properly interpreted, means

simply that we know matter as extended. It is true that time is bound up with the exercise of the internal sense, or self-consciousness, but by this we are simply to understand that all events are remembered in time. It does not follow that they are creations of the mind, or that they are properly represented when they are spoken of as forms imposed on phenomena. It is not true that extension and duration are superimposed on objects; they are in the very nature of the objects and events as made known to us.

There are other things besides space and time that we can not be rid of in thought, as we contemplate things perceived. For example, we know both matter and mind as having being. The old Eleatics were right in giving τὸ ὄν a deep place in their philosophy, though they erred in making so many affirmations about so simple a thing. I believe farther that we know all objects disclosed by the senses as having power, as acting and being acted on. I think we might farther represent them as in a sense having independence and permanence, that is, they are not created by our minds as we observe objects, nor do they cease to exist when we cease to notice them. They exist independent of us, and whether we notice them or not. They are as much entitled to be called forms as space and time. Being, potency, permanence, are not *à priori* forms imposed on substances; they are in the substances. Just as little is extension added to matter or duration added to events; they are in matter and discerned to be in matter or mind.

Kant represents space and time as having an existence, but it is merely a subjective existence, that is, in the mind as contemplating objects and events. But I affirm that intuitively and necessarily all men look on them as existing, and as existing independently of our noticing them. I am quite as sure of the reality of space and time independent of my mind as of the objects in space and

time. By making space and time merely subjective, Kant introduced an ideal element into his philosophy which he could never expel. We have only to carry out the same principle a step farther to be landed in the thorough idealism of Fichte, and make the mind create the objects in space and the occurrences in time. Then when men come to perceive that an ideal existence is no existence, but merely an imaginary or ghostly existence, the creed they adopt will be nescience. We find extremes meeting in the present day in a pretentious idealism joined with a deadly agnosticism.

But what is space? and what is time? The answer is, that we can not explain them so as to make them conceivable to one who did not already know them. But we all know them in the concrete in objects and events, and we are sure that they are what we know them to be. We do not need any explanations as to what they are, we perceive them directly, and are satisfied without feeling it necessary to put any farther questions.

From what we know we can make many affirmations regarding them. The axioms and demonstrations of mathematics proceed upon them. The Kantians labor to show that they can explain by their forms the certainty and the necessity of mathematical truths, which are just the evolution of what the mind imposes on appearances. "Kant found that he could not trace out and learn the properties of an isosceles triangle from what he saw in it, or from mere thinking about it, but rather from what he had added to the figure in his own mind *à priori*, and had them represented by a construction. He also found that all the safe *à priori* knowledge he could obtain about it was merely the necessary consequence of what he had introduced into it according to his own concepts" (Mahaffy's *Crit. Phil. for English Readers*, p. 12). But surely this leaves it

utterly uncertain whether what we thus bring out of our minds can be asserted of veritable things; whether, so far as things are concerned, we can say that the angles of a triangle must be equal to two right angles; or whether parallel lines can not meet. We have a much simpler and more rational way of accounting for the apodictic certainty of mathematics. We perceive lines and surfaces as realities; we agree to look solely to the length of lines and the length and breadth of surfaces; and as we do so we discover that they have certain properties involved in their very nature, and that the three angles of a triangle are together equal to two right angles, and that parallel lines can not meet. The properties of the ellipse, as demonstrated by Apollonius, were ready to be applied to the planetary bodies when Kepler showed that they moved in elliptic orbits. On the other hand, we may put many questions regarding space and time which we can not answer. Affirmations are often made of them which are altogether meaningless, and which we can neither prove or disprove. There may be assertions made in regard to them which are contradictory, and this not because there is anything inconsistent in the things themselves, but because we make rash statements which contradict each other.

While we have a knowledge of space and time we should allow that this is somewhat indefinite. We know them as realities; but do we ever know them apart from other things? We know this body as occupying space, we know this event as occurring in time, and we know the space and time to be realities quite as much as the body and the event is; but do we ever know space and time as separate things, or capable of a distinct and independent existence—as a tree is distinct from an animal? Space and time look as if somehow or other—we may not be able to tell how—they were always connected with something else, as if they were

dependent on something else for their manifestation. I believe them to be dependent on God, who inhabits all space and all time.

In following our intuitive convictions as to space and time, we are constrained to regard both as having no limits. This gives rise to a difficulty which Kant has powerfully pressed. It seems to make two infinities, that of space and time, each embracing all things, while we are also constrained to believe in a third infinity, in God the Almighty, the Eternal. But there is a misapprehension involved in this objection. We do not hold that space and time are infinities; infinity is merely an attribute of both. We do not say of their infinity that it embraces all things—we would never propose to make the infinity of space embrace morality. When we say that space is infinite we mean simply that there are no limits to its extension. There is not even an apparent inconsistency between this and the infinity of time and the infinity of God. It can not be proven that the infinity of space or time is inconsistent with the infinity of God; more probably they are embraced in His infinity.

TRANSCENDENTAL ANALYTIC.

We now rise from the Senses to the Understanding, der Verstand, from Intuitions to Notions or Conceptions. The understanding pronounces judgments. He gives an inventory of these judgments and calls them Categories. The phrase is taken from Aristotle, who has ten Categories, being the heads under which our predications regarding things may be ranged. The aim of Kant, as has been shown again and again, is somewhat different: it is to give us the forms which the mind imposes on our intuitions or perceptions in the judgments which it pronounces. They are four in number, each subdivided into three, in all twelve.

I. QUANTITY.

Unity.
Plurality.
Totality.

II. QUALITY.

Reality.
Negation.
Limitation.

III. RELATION.

Inherence and Subsistence.
Causality and Dependence.
Reciprocity of Agent and
Patient.

IV. MODALITY.

Possibility and Impossibility.
Existence and Non-existence.
Necessity and Contingence.

There has been an immense amount of discussion in Germany about these categories. The first two of the four are evidently taken from Logic, of which Kant was professor, and are found in all treatises of formal logic. The remarks of Kant upon them have helped to make the ordinary logic more clear, consistent, and philosophical. They are represented as mathematical, whereas the other two are dynamical and certainly imply ideas of being, of force and causation. These last are metaphysical rather than logical and do not now appear in the treatises of formal logic which treat of the laws of discursive thought.

It appears to me that Kant should here have given us not the forms of logic, but the relations which the mind can discover. It is the province of the psychological faculty of judgment to discover relations. This was perceived by Locke, who gave an excellent classification of the relations, making them, however, relations between ideas which we are capable of discerning, and not things. Hume also gives the mind a power of discovering relations, and gives a good enumeration of them, endeavoring all the time to explain them away by showing that the relations are simply between impressions or ideas which imply no realities.¹ It was in this way that Hume carried out his

¹ Locke speaks of relations as being innumerable, and mentions Cause and Effect, Time, Place, Identity and Diversity, Proportion and Moral Relations (Essay II. 28). Hume mentions Resemblance, Identity,

scepticism. As he began with impressions and ideas implying no object perceived or mind perceiving it, he goes on to make the understanding to deal entirely with these. Kant, as the professed opponent of scepticism, should have met Hume at this point. But he has not. He first gave the sceptic an entrance by the senses; he now allows him a place in the understanding, and it will be found difficult to expel him.

Equally with space and time the categories are forms. They have their seat and power in the mind. The forms of sense were imposed by the mind on appearances; the forms of the understanding—this is, the categories—are imposed on, and give them their unity. The question with me, what is the reality implied in the judgments of the understanding? Already the reality has very much disappeared. In the intuitions of the senses there had been so much of a reality as is implied in the appearances which, however, have always *à priori* forms imposed on them. Now, the judgment is pronounced on this complex of appearance and intuition, and the reality has all but vanished. The categories are “nothing but mere forms of thought, which contain only the logical faculty of uniting *à priori* in consciousness the manifold given in intuition. Apart from the only intuition possible for us, they have still less meaning than the pure sensuous forms, space and time; for through them an object is at least given, while a mode of connection of the manifold, when the intuition which alone gives the manifold is wanting, has no meaning at all” (Trans., p. 184).

This is not, as it appears to me, the natural or the true

Space and Time, Quantity, Degree, Contrariety, Cause and Effect. Keeping these lists before me, I make them Identity, Comprehension Whole and Parts, Resemblance, Space, Time, Quantity, Active Property, Cause and Effect (*Intuitions*, P. II. B. III.).

account. I hold that the mind, first by its cognitive power of sense, external and internal, knows things, and then by the understanding or comparative powers discovers various kinds of relations between things. Of course, if the things be imaginary the relations may also be imaginary. Thus we may say that Venus was more beautiful than Minerva, and both the terms and the propositions are unreal. But when the intuitions are of realities, when I am speaking of Demosthenes and Cicero, and declare Demosthenes a greater orator than Cicero, there is a reality both in the terms and the propositions.

Here it will be necessary to correct an error into which the whole school of Kant has fallen. They deny that the understanding has any power of intuition, *der Verstand* can not intuite. I maintain, on the contrary, that it has, the statement being properly explained and understood. The comparative powers presuppose a previous knowledge of things by the senses and consciousness, and they give us no new things. But having such a knowledge, the mind, by barely looking at the things apprehended, may discover a relation between them, and this intuitively by bare inspection, without any derivative, mediate, or discursive process. Thus understood, we may have intuitive or primitive judgments as well as perceptions. These constitute an important part of the original furniture of the mind, and should be included in our inventory.

Taking the category of cause and effect as an example, let me exhibit the difference between the view elaborated by Kant and that which I take. We affirm that the cause of that rick of hay taking fire was a lucifer-match applied to it. What have we here? According to Kant, a rick or an appearance, partly *a posteriori* with a certain color, and partly *a priori* with a form given it. We have also a lucifer-match with a like double character, *a priori* and *a*

posteriori. We unite the two by means of an *a priori* category, that of cause and effect, and declare the lucifer-match to be the cause of the conflagration. Is this the real mental process? Let me give in contrast what I believe to be the true account. We have first the rick as a reality, and then the match as a reality, both known by the senses and information we have had about them. On looking at the rick and discovering a change, we intuitively look for a cause, and on considering the properties of the lucifer-match, we decide that it is fit to be the cause. We have thus realities throughout, both in the original objects and the relations between them.

Kant is constantly telling us that the function of the categories is to give a unity to the perceptions compared. But let us understand what is or should be meant by this. It ought not to signify that the unity is an identity—this was the conclusion to which Fichte, Schelling, and Hegel sought to drive the doctrine of Kant on this subject. What we should understand is simply that the unity is one of relation, say of space, of quantity, of causation. Little or no information is given us by saying that intuitions or notions are brought to a unity unless it is told us in respect of what they are one, that is, by what relation, say by resemblance by time or whatever else. It should be understood that the oneness indicated is merely one in respect of that relation, which should always be expressed.

I announced at the opening of this paper that in my criticism I was to proceed only on what is admitted by all as to the meaning of Kant. At the part of his great work to which we have now come there are several disputed points, and, however tempted, I do not mean to discuss these. In treating of the categories he brings an *a priori* 'I think' called an apperception—as running through all our judgments and imparting a unity to them. There is truth

here, but it is not accurately unfolded. The correct statement is: By self-consciousness we know self in its present state, say as thinking, and this knowledge of self goes on with all our states, and, among others, the acts of the understanding in judgment.

He calls in an *à priori* use of imagination and a *schematismus*. Both are meant to bridge over gaps in his system. It is true that if an object be absent and we have to think of it, we must have an image, or what Aristotle calls a phantasm of it, and the mind can put these phantasms in all sorts of forms. Kant brings in an *à priori* imagination to represent to the judgment the manifold of the senses in unity. I regard it as an important function of the phantasy to represent absent or imaginary objects to the understanding to judge of them. The office of the schematism is to show how the categories, which are *à priori* forms, are applicable to the empirical intuitions of sense. I do not need such an intermediary, as I hold that the mind can at once know things and the relations of things.

At the close of the *Analytic*, Kant lays down a number of principles which follow from his theory and seem to confirm it. We have Axioms of Intuition, Anticipations of Perception, Analogies of Experience, The Postulates of Empirical Thought. These are not essential parts of his system, and have no value to those who do not adopt them. I think it expedient, therefore, to omit the discussion of them, as in no way helping, in one way or other, the controversy about the idealism of Kant.

He is now prepared to give us a division of all objects into Phenomena and Noumena. His account of each and of the relation between them is very unsatisfactory. Of the first it is supposed that we know only appearances which do not correspond to realities. Of the second we know that they exist, but then they are unknown and unknowa-

ble. Nothing but agnosticism can issue logically and practically from such a doctrine. How much more natural and reasonable to regard the phenomenon as a thing appearing and so far known, as in fact a noumenon implying intelligence.

TRANSCENDENTAL DIALECTIC.

Dialectic was a method introduced by Zeno, the Eleatic, and followed by Socrates, who established truth by discussion, in which division, definition, and the law of contradiction played an important part. Aristotle used the phrase to describe the logic of the probable as distinguished from the apodictic. The dialectics of Kant estimate the reality to be found in the exercises of reason. He arrives at the conclusion that these all end, not just in deceit, but in illusion. He has been laboriously building a mighty fabric; but he now proceeds to pluck it down with his own hands. At this point he is guilty of intellectual suicide. He is described by Sir W. Hamilton as the dialectical Samson, who, in pulling down the house upon others, has also pulled it down upon himself.

The professor of Logic at Königsberg was nothing if not logical. Beginning with intuition he has gone on to the Notion and Judgment, and now rises to Reasoning beyond *der Verstand* to *die Vernunft*. All his critics think that, strange as it may seem of one who has studied Reason so profoundly, he confounds what most of our deeper philosophers have distinguished, reason and reasoning—the first of which perceives certain truths—such as the axioms of Euclid immediately, whereas the other deduces a conclusion from premises. As the forms of space and time give unity to the manifold of the senses, and the categories give unity to our perceptions, so reason or reasoning gives a unity to the judgments. The form which gives this unity is called by him an *Idea*. All human cognition begins with intui-

tion, proceeds from thence to conceptions, and ends with ideas. This word Idea is one of the vaguest terms used in metaphysics. Introduced into philosophy by Plato, who signifies by it the *παράδειγμα* in or before the mind, it had a different meaning attached to it by Descartes and Locke, the latter of whom makes it the object of the understanding when it thinks; and now it embraces in popular use nearly every mental apprehension, and in particular two such different things as the individual image or phantasm, say of a rose, and the general notion as the class rose. Kant employs it in a sense of his own to denote the form which gives unity (a vague enough phrase, as we have seen) to the Categories.

Reason, according to Kant, takes three forms—Categorical, Conditional, Disjunctive. This may be true of reasoning, but is certainly not true of Pure Reason. As to reasoning, I hold that it is always one and the same. But it does take the three forms spoken of by Kant, and I look on the division of Kant as founded on fact. But I reckon the use of it by him as artificial in the extreme.

THE FORMS OF REASONING.

Categorical, Conditional, Disjunctive.

THE BINDING IDEAS.

Substance, Interdependence of Phenomena, God.

It is hard to discover how the Ideas as forms give the Reasoning, or how the Ideas are given by the Reasoning. In particular, his derivation of God from Disjunctive Reasoning seems to me very constrained. No doubt Disjunctive Reasoning, which proceeds by Division, implies a unity in the thing divided. But it is scarcely reverent to designate it God. This may seem pious, but it is not so; I wish he had called it by some other name. The God who is the issue of this logical process is not the living and the

true God. Certainly no one could cherish love towards such a product. It turns out that this God is discarded and cast out as peremptorily as he has been brought in.

But my search is after the reality, supposed to be in these ideas. What reality remains, except, indeed, a subjective reality implying an objective existence? Is it not virtually gone? The light has been reflected from mirror to mirror, till now nothing definable is left. There was a sort of reality, phenomenal and subjective, in the intuition; this had still an attached reality in the judgment. But it is difficult to detect it, and impossible to determine what it is in the third transformation—a reality or an illusion, a something or a nothing, a shadow or a reflection of a shadow. Kant acknowledges, “The categories never mislead us, object being always in perfect harmony therewith, whereas ideas are the parents of irresistible illusions” (Trans., p. 394). These illusions are like the concave shape we give the sky; like the rising, rounded form we give the ocean when we stand on the shore; like the foam made by the waters, which we may wipe away, only to find it gather again. Kant is still pursuing the reality, the *Ding an sich*, but it is as the boy pursues the rainbow, without ever catching it. He argues powerfully that if we suppose these ideas to be realities we fall into logical fallacies.

SUBSTANCE.—If from the intuitions of sense or the categories of the understanding we suppose substance to be real, we have a paralogism—that is more in the conclusion than is justified by the premises. This is undoubtedly true if we regard our primitive intuitions as appearances and not things, and the categories as having to do solely with appearances. Kant examines the *cogito ergo sum* of Descartes. If the *ego* is in the *cogito* we have no inference, but merely a reassertion. If the *ego* is not in the *cogito*, then the con-

clusion does not follow—we have a paralogism; we have only an appearance and not a thing. I have a very decided opinion that we should not try to prove the existence of self, or of body, by mediate reasoning. We should assume the existence of *ego cogitans* as made known by self-consciousness, and also of body as extended and resisting our energy by the senses. We know both mind and body as having Being, Potency, and as having Objective Existence, and not created by our contemplating them, and this makes them substances.

INTERDEPENDENCE OF PHENOMENA.—Under this head he maintains that we are landed in contradictions or antinomies, that is, if we look on the Ideas as implying things. He resolves the contradictions by showing that we are not to imagine that what we can affirm and can prove to be contradictory in phenomena is necessarily so of things. Those of us who hold that the mind knows things have to meet these contradictions. This we do by showing that the counter propositions in some cases are not proven, and that in other cases the alleged contradictions are merely in our own mutilated statements, and not in the things themselves, or our native convictions about them.

FIRST ANTINOMY.

The world has a beginning in time and is limited as to space.

The world has no beginning in time, and no limits in space, but is in regard to both infinite.

Now upon this I have to remark, first, that as to the “world” we have, so far as I can discover, no intuition whatever. We have merely an intuition as to certain things in the world, or, it may be, out of the world. Our reason does declare that space and time are infinite, but it does not declare whether the world is or is not infinite in extent and duration.

SECOND ANTINOMY.

Every composite substance consists of simple parts, and all that exists must either be simple or composed of simple parts.

No composite thing can consist of simple parts, and there can not exist in the world any simple substance.

Our reason says nothing as to whether things are or are not made up of simple substances. Experience can not settle the question started by Kant in one way or other. We find certain things composite; these we know are made up of parts; but we can not say how far the decomposition may extend, or what is the nature of the furthest elements reached.

THIRD ANTINOMY.

Causality, according to the laws of nature, is not the only causality operating to originate the phenomena of the world; to account for the phenomena we must have a causality of freedom.

There is no such thing as freedom, but everything in the world happens according to the laws of nature.

Here I think reason does sanction two sets of facts: One is the existence of freedom; the other is the universal prevalence of some sort of causation, which may differ, however, in every different kind of object. These may be so stated as to be contradictory. But our convictions in themselves involve no contradiction; it is impossible to show that they do by the law of contradiction, which is that, "A is not Not-A." "There is some sort of causation even in voluntary acts," and "the will is free"; no one can show that these two propositions are contradictory.

FOURTH ANTINOMY.

There exists in the world, or in connection with it, as a part or as the cause of it, an absolutely necessary being.

An absolutely necessary being does not exist, either in the world or out of it, as the cause of the world.

Our reason seems to say that time and space must have ever existed, and must exist. When a God is found, by an easy process, the mind is led by intuition to trace up these effects in nature to Him as the undervived substance. No contradictory proposition can be established either by reason or experience.

A little patient investigation of our actual intuitions will show

that all these contradictions, of which the Kantians and Hegelians make so much, are not in our constitutions but in the ingenious structures fashioned by metaphysicians to support their theories.

It is often urged as a powerful argument in favor of Kant's phenomenal theory that it enables us to see that there may be no inconsistency between the universal reign of causality and the freedom of the will; for both are to be regarded as laws of the phenomenal and not the real world. But all this shows, not that the will is free in the real world, but merely that it may be free; while we are obliged to look upon it as not free in this world of appearances in which we live. It is surely much more satisfactory to show that in the real world it is free and that it can not be proven that there is a contradiction between this fact and the law of causation properly explained.

THE THEISTIC ARGUMENTS.—He has a well-known three-fold classification of them: the Ontological, the Cosmological, and the Physico-Theological. I have no partiality for the first two. The first is, that from the idea of the perfect in the mind we may argue the existence of a perfect being. I am not sure that the idea of the perfect implies the existence of a corresponding being, though it prepares us for receiving the evidence and enables us to clothe the Divine Being shown on other grounds to exist, with perfection. In regard to the second, which infers from the bare existence of a thing that it has a cause, I am not prepared, from the bare existence of a handful of sand, or a piece of clay, to argue that it must have had a Divine Cause. But I hold that the third, more frequently called the Teleological, the argument from design, is conclusive if properly stated. Kant can not acknowledge its validity, simply because it implies the principle of cause and effect, which he regards as applying only to appearances, and having merely a subjective value. But when we hold that the things in the world are real, and discover so wonderful an adjustment among them to produce a good end, say of rays of light, muscles, coats and humors, cones and nerves to enable us to see, then we are entitled to argue a real cause in a designer, whom the idea

of the perfect in the mind constrains us to clothe with infinity.

The objection taken to all this, is that from a finite effect, say of a wonderful combination of things to accomplish an end, we can not argue an infinite cause. I believe no man ever said that we can. All that the design proves is a designer, and it is from the idea of the infinite in the mind that we clothe him with infinity, just as it is from our moral nature, as Kant admits, that we clothe him with moral perfection.

THE PRACTICAL REASON.

The part of the Kantian philosophy which is the strongest and healthiest is the ethical. No writer in ancient or modern times has stood up more resolutely for an independent morality. There may, he thinks, be legitimate disputes as to what things are, and the speculative reason may lead to illusions, but the moral power comes in to save us from scepticism. He finds here a moral reason by which the good is perceived, not as a phenomenon by superimposed forms, but directly. This reason takes the form of a Categorical Imperative, which seems to me a most admirable designation, bringing into view at one and the same time the affirmative and obligatory character of morality. The law which it sanctions is a modification of the supreme ethical law laid down by our Lord, and is: Act according to a rule applicable to all intelligences. This implies that man is free and responsible, and as a corollary, that he is responsible, that there is a judgment day and a future life, and a God to guarantee the whole. Morality, immortality, and God are thus indissolubly bound together.

I confess I should like to have this whole connected argument expressed in language not involving any peculiarly

Kantian phraseology and principles. In particular, great good would be done by a psychological account of the Practical Reason, and by an explanation and defence of the precise nexus between the moral law and the existence of God. This is eminently needed in the present day, when the common sentiment is sensitively averse to the nomenclature and abstractions of high metaphysical philosophy.

It was argued at an early date after the publication of Kant's great work, that if the speculative reason may deceive by leading us into illusions, the moral reason may do the same. I believe that the phenomenal and illusory principles of the *Kritik* of the Pure Reason, if carried out in a *Kritik* of the Practical Reason would undermine morality. It seems to me very clear that we must proceed on the same principles in expounding intelligence and truth as we do in defending morality. I am convinced that the principles of his ethics, if carried into the region of the speculative reason, would establish positive truth, without illusions of any kind. Surely the Practical Reason, according to Kant, has a power of intuition: it at once perceives moral good. I think that on like evidence he should have called in, and appealed to, certain intuitions of intelligence which look at things and guarantee reality. Had he done so, we should have had as firm a foundation for truth as he has furnished for morality.

I believe that Kant has substantially established his moral positions. They can not be assailed, except on grounds which Kant himself unfortunately furnished. Kant admitted, in fact argued, that the speculative reason led to illusions, indeed to contradictions, on the supposition that we know things, and then brought in the moral reason to bring us back to truth and certainty. The risk in all such procedure is, that those led into the slough may be caught there and go no farther. For if the speculative

reason may gender illusions, what reason have we for thinking that the practical reason gives us only truth? I do not admire the wisdom of those who first make men infidels in order to shut them into truth—as they feel the blankness of nihilism.

It was in mockery that Hume, after showing that reason leads into contradictions, allowed religious men to appeal to faith. There was far less shrewdness shown by those philosophers in the age following, who, after allowing that the intellect leads to scepticism, fell back with Jacobi and Rousseau (who was a favorite with Kant) on an ill-defined faith or feeling. The pursuing hound which had caught and torn to pieces the understanding, having tasted blood, became more infuriated, and went on to attack and devour the belief or sentiment. It is of vast moment, both logically and practically, to uphold the reason in discovering truth, if we would defend the reason in discovering the good. I deny that the reason ever lands us in contradictions or leads into error or even illusion. In the antinomies the mistakes are all in our own statements, and not in the dictates of our nature. The intellect does not lead to all truth, but if properly guided it conducts to a certain amount of truth, clear, well established, and sure. Beginning with realities, it adds to these indefinitely by induction and by thought. The speculative reason properly employed, so far from conflicting with and weakening moral reason, confirms and strengthens it.

Proceeding in our inductive method, with criticism merely as a subordinate means, we keep clear of that heresy into which the Kantians have fallen of making a schism in the body—which in this case is not the church, but the mind. I can not allow that one part or organ of our nature leads to error, and another to truth. I hope we have done with that style of sentiment, so common an age

or two ago, which lamented in so weakly a manner, often with a vast amount of affectation, that reason led to scepticism, from which we are saved by faith, and which was greatly strengthened by Kant's doctrine of the practical reason coming in to counteract the illusion of the speculative reason. The account I have given above makes every part of our nature correspond to and conspire with every other. It does more—it makes every faculty of the mind yield its testimony to its Divine author. The understanding collating the facts in nature and observing the collocations therein, and proceeding on its own inherent law of cause and effect, which I represent as having an objective value, furnishes the argument from design for God's existence. Then our moral nature comes in, and reveals a law above us and binding on us, and clothes the intelligence which we have discovered with love. I admit that the finite works of God do not prove God to be infinite. I repeat, no one ever said that they did. But this circumstance has made Kant and his school insist that thereby the theistic argument is made invalid. But as we call in our moral nature to clothe God with rectitude, so we call in that idea of the infinite, the perfect, which the mind has, and which was fondly dwelt on by Anselm, Descartes, and Leibnitz, to clothe him with infinity. Our nature is thus a harmoniously constructed instrument, raising a hymn to its Creator.

THE KRITIK OF THE JUDGING FACULTY.

Kant brings in this power (*Urtheilskraft*) in a very awkward manner. He had previously spoken of Judgment in the ordinary logical sense, and shown that it is regulated by Categories. He now brings in an entirely different kind of Judgment. Its office is to mediate between the Reason and the Understanding, as if they had had a quarrel. It is brought in to fill up a gap, not in the mind, but

in his system, which had overlooked certain very prominent exercises of the soul. It is one of the abutments which he is ever adding to enable him to give a place to all the mental phenomena and to support his edifice. In this work he treats of Final Cause and Beauty in nature. He advances some views as true as they are beautiful. I do not mean to criticise his theories, as they form no essential part of his philosophy. He follows his old tendencies and makes final cause and beauty to be imposed on objects by the mind. The true account is that they imply qualities in the objects which the mind perceives.¹

Having taken this general critical survey of the philosophy of Kant, it may serve a good purpose to compare and contrast it with the Scottish. Sir James Mackintosh and Dr. Chalmers, who were trained in the Scottish school, upon becoming somewhat acquainted in mature life with the German system, were greatly interested to notice the points of resemblance between the two philosophies. The two—the Scotch and the German—agree, and they differ. Each has a fitting representative: the one in Thomas Reid and the other in Immanuel Kant. The one was a careful observer, guided by common sense—with the meaning of good sense—suspicious of high speculations as sure to have error lurking in them, and shrinking from extreme positions; the other was a powerful logician, a great organizer and systematizer, following his principles to their consequences, which he was ever ready to accept, avow, and proclaim. The two have very important points of agreement. Reid and Kant both lived to oppose Hume, the great sceptic, or, as he would be called in the present day, agnostic.

¹ I may state that I have expounded my views of Final Cause in No. II. of this *Series*, and of Beauty in *The Emotions*, B. III., c. 3.

Both met him by calling in great mental principles, which reveal and guarantee truth, which can never be set aside, and which have foundations deep as the universe. Both appeal to reason, which Reid called reason in the first degree, and the other pure reason. The one presents this reason to us under the name of common sense—that is, the powers of intelligence common to all men; the other, as principles necessary and universal. The one pointed to laws, native and fundamental; the other, to forms in the mind. The one carefully observed these by consciousness, and sought to unfold their nature; the other determined their existence by a criticism, and professes to give an inventory of them. All students should note these agreements as confirmatory of the truth in both.

The Scotch and German people do so far agree, while they also differ. Both have a considerable amount of broad sense, and, I may add, of humor; but the Scotch have greater clearness of thinking, and the Germans of attractive idealism. Scotland and Germany, in the opinion of foreigners, are not very far distant from each other. But between them there roars an ocean which is often very stormy. I proceed to specify the differences of the two philosophies.

First, they differ in their Method. The Scotch follows the Inductive Method as I have endeavored to explain it. The German has created and carried out the Critical Method, which has never been very clearly explained and examined. It maintains that things are not to be accepted as they appear; they are to be searched and sifted. Pure reason, according to Kant, can criticise itself. But every criticism ought to have some principles on which it proceeds. Kant, a professor of Logic, fortunately adopted the forms of Logic which I can show had been carefully inducted by Aristotle, and hence has reached much truth.

Others have adopted other principles, and have reached very different conclusions. The philosophies that have followed that of Kant in Germany have been a series of criticisms, each speculator setting out with his own favorite principle,—say with the universal *ego*, or intuition, or identity, or the absolute,—and, carrying it out to its consequences, it has become so inextricably entangled, that the cry among young men is, “Out of this forest, and back to the clearer ground occupied by Kant.” The Scottish philosophy has not been able to form such lofty speculations as the Germans, but the soberer inductions it has made may contain quite as much truth.

Secondly, the one starts with facts, internal and external, revealed by the senses, inner and outer. It does not profess to prove these by mediate reasoning: it assumes them, and shows that it is entitled to assume them; it declares them to be self-evident. The other, the German school, starts with phenomena—not meaning facts to be explained (as physicists understand the phrase), but *appearances*. The phrase was subtly introduced by Hume, and was unfortunately accepted by Kant. Let us, he said, or at least thought, accept, what Hume grants, phenomena, and guard the truth by mental forms—forms of sense, understanding, and reason. Our knowledge of bodies and their actions, our knowledge even of our minds and their operations, is phenomenal. Having assumed only phenomena, he never could rise to anything else. Having only phenomena in his premises he never could reach realities in his conclusions except by a palpable paralogism, which he himself saw and acknowledged. We human beings are phenomena in a world of phenomena. This doctrine has culminated in the unknown and unknowable of Herbert Spencer, implying no doubt a known, but which never can be known by us. We all know that Locke, though himself a most

determined realist, laid down principles which led logically to the idealism of Berkeley. In like manner, Kant, though certainly no agnostic, has laid down a principle in his phenomenal theory which has terminated logically in agnosticism. We meet all this by showing that appearances properly understood are things appearing, and not appearances without things.

Thirdly, the two differ in that the one supposes that our perceptive powers reveal to us things as they are, whereas the other supposes that they add to things. According to Reid and the Scottish school, our consciousness and our senses look at once on real things; not discovering all that is in them, but perceiving them under the aspect in which they are presented—say this table as a colored surface perceived by a perceiving mind. According to Kant and the German school, the mind adds to the things by its own forms. Kant said we perceive appearances under the forms of space and time superimposed by the mind, and judge by categories, and reach higher truth by ideas of pure reason, all of them subjective. Fichte gave consistency to the whole by making these same forms create things.

Our thinking youth in the English and French speaking countries having no very influential philosophy at this present time, and no names to rule them, are taking long-
ing looks towards Germany. When circumstances admit, they go a year or two to a German university—to Berlin or to Leipsic. There they get into a labyrinth of showy and binding forms, and have to go on in the paths opened to them. They return with an imposing nomenclature, and clothed with an armor formidable as the panoply of the middle ages. They write papers and deliver lectures which are read and listened to with the profoundest reverence—some, however, doubting whether all these distinctions

are as correct as they are subtle, whether these speculations are as sound as they are imposing. All students may get immeasurable good from the study of the German philosophy. I encourage my students to go to Germany for a time to study. But let them meanwhile maintain their independence. They may be the better of a clue to help them out of the labyrinth when they are wandering. The children of Israel got vast good in the wilderness as they wandered: saw wonders in the pillar of cloud and fire, in the waters issuing from the rock, and the manna on the ground; but they longed all the while to get into a land of rest, with green fields and living rivers. We may all get incalculable good from German speculation, but let us bring it all to the standard of consciousness and of fact, which alone can give us security and rest.

I am quite aware that a large body of speculators will look down with contempt on the sober views I have been expounding, and not think it worth their while to examine them. Metaphysical youths from Britain and America, who have passed a year or two at a German university, and have there been listening to lectures in which the speaker passed along so easily, and without allowing a word of cross-examination, such phrases as subject and object, form and matter, *à priori* and *à posteriori*, real and ideal, phenomenon and noumenon, will wonder that any one should be satisfied to stay on such low ground as I have done, while they themselves are on such elevated heights. But I can bear their superciliousness without losing my temper, and I make no other retort than that of Kant on one occasion, "that their master is milking the he-goat while they are holding the sieve." I am sure that the agnostics, whether of the philosophical or physiological schools, will resent my attempt to give knowledge so firm a foundation. I may not have influence myself to stop

the crowd which is moving on so exultingly; I may be thrown down by the advancing cavalcade; but I am sure I see the right road to which men will have to return sooner or later; and I am satisfied if only I have opened a gate ready for those who come to discover that the end of their present broad path is darkness and nihilism.

Some good ends may be served by explaining here those correlative phrases which are passed on so readily in German metaphysics, but under which the errors I have been exposing lurk. By *Real* is meant a thing existing; by *Ideal* what is created by the mind. *Subject* signifies the mind contemplating a thing; *Object* a thing contemplated. This distinction does not imply that the subject adds to the object what is not in it. When the two phrases are together they should be used as correlative. In common language the phrase *Object* is often employed to denote a thing, whether it be contemplated by the mind or not. In this latter sense subject does not imply an object, nor object a subject. *Phenomenon* in science means a fact to be explained. In German philosophy it means a mere appearance which is an abstraction. The mind is conscious not of an appearance, but of a thing appearing. By *Noumenon* is meant a thing known or apprehended, which Kant regards as unknowable by human intelligence. But in our realistic philosophy we claim to know things which in that sense are noumena. By *à Priori* is meant the regulative principles which are in the mind prior to experience; but this does not imply that there are ideas in the mind prior to experience. By *à Posteriori* is signified truth obtained by a gathered or inductive (not an individual) experience. *Form* and *Matter* are such metaphorical phrases that they might be expediently abandoned in philosophy. By *Form*, in German metaphysics is denoted something imposed by the mind on things; by *Matter* the

things, commonly unknown, on which the Form is imposed. If the terms are to be retained, by Form should be meant the law by which things act, Matter the things as obeying the law. All these phrases as commonly used in metaphysics have an ideal tendency.

IDEALISM in thought and language runs through and through the philosophy of Kant. It appears first in making the mind give a unity to the manifold perceived by the senses, say to a stone, whereas the unity is in the stone itself. Secondly, it supposes space and time not to be things, but to be forms superinduced on things. Thirdly, the relations between objects are imposed on them by the Categories of the understanding. Fourthly, substance, interdependence of things, and God himself are regarded as ideas without a real objective existence. Fifthly, Final cause and beauty are a mere halo cast around things by the imagination.

It has been shown again and again how, according to the doctrine of development, which can be traced in the history of philosophy as well as in the natural sciences, Fichte was evolved from Kant, and Schelling from Fichte, and Hegel from Schelling. Kant made the mind create space and time, and all the forms imposed on things; Fichte, who was a pupil of Kant at one time, following out his principles, made the mind also—greatly to the annoyance of Kant, who disowned his disciple—to create the things in space and time. It was felt that Fichte's egoistic theory left out one side of the actual world, and many rejoiced that Schelling took up the other side, making the two halves one in a doctrine of absolute identity. In the construction of his theory, he and those swayed by him (for example, Principal Shairp) pointed out many beautiful correspondences between the subjective mind and the actual world. But the system of Schelling was so evidently visionary, and apparently pantheistic, that a demand was made to

have it shown that the prevailing idealism has a ground in reason; and this was the work of Hegel.

At more than one period of my life I have toiled hard to master the system of Hegel. But I have failed, and am willing to acknowledge it. On a very few occasions I have ventured to criticise the great thinker—as he is reckoned; but I was told instantly that I did not understand him, and I was restrained from prosecuting the controversy by the possibility that this might be true. It was at one time reported that Hegel had said, that “no man understands me but one, and he does not understand me.” This is now denied. But as it is said of Shakespeare’s pictures of Henry V. and the English kings, that if not true they might have been true; so it may be, that if this story about Hegel is not true it might have been true. His system seems to me to be beyond measure unnatural, and artificial. His constant threefold divisions which in the end he identifies with the threefold distinctions of the Divine nature, might be carried on as far as speculative intellect sees fit to prosecute it, but with no correspondence in things external or internal. No two of his followers understand him alike, and each charges his neighbor with misinterpreting him. Scarcely any of them do now profess to believe in his system throughout; but they adhere to his dialectic method and expect that what he has left incomplete may be finished by themselves or others. To me a number of his favorite maxims, as that Being and Not Being are identical, that Being and Thinking are the same, and that contradictories may be true, seem to me to be a *reductio ad absurdum* of the whole system. It has been my aim in this paper to undermine the Kantian principles on which the whole fabric has been reared.

I am aware that many revel with intense pleasure in idealism. I believe that all minds may be elevated by cer-

tain forms of it. The great constellation of genius—including Herder, Schiller, and Goethe, with those poets influenced by them in Great Britain, which appeared at the end of last century and the beginning of this, got a portion of their light and power from the subjective German philosophy. But to keep ourselves steady in the flight of the imagination, let us have a clear perception of the difference between the ideal and the real. When we rise to the ideal let it ever be from the real, to which we should always return for stability and rest. It is good for us to ascend from time to time our great mountains, and we may thereby get life and health as well as a larger prospect; but it might not be so good always to dwell on these heights which may become over-stimulating and dizzying. The mind has the capacity of imagination, which is a very lofty one, but it has also a power of judgment, meant to steady the flights of the fancy. We all wish to see pictures of high ideal scenes, but we do not regard these as realities—we distinguish between portraits and historical paintings. Let us clearly see that poetry is not philosophy.

AGNOSTICISM.—It is proverbial that extremes meet—just as West and East meet at lines on our globe. Strange as it may seem, while there is idealism throughout Kant, agnosticism has also its roots deep in his philosophy. It maintains resolutely—I believe without sufficient proof—that there are things, but it makes them unknown and unknowable. Its very idealism, regarded as a philosophy, favors nescience. It makes a large portion of what we naturally believe, to be phenomenal and illusory. Following it out logically, people argue that if the mind can add one quality to things out of its own stores, it may add ten or a hundred, till at last we can not tell what is in things, or whether there are any things. Hence we find all the

positivists and agnostics, and even the materialists of the day, when pressed by their adversaries falling back on the forms and ideas of Kant.

"Back to Kant" is the cry in our day of the younger German school, re-echoed by the speculative youths of England and America. The cry is a healthy symptom on the part of those who utter it. It shows that they are becoming somewhat anxious as to where recent speculation is leading them; as to whether it is carrying them up into an ethereal region where they have difficulty in standing or breathing, or dragging them down into a swamp where the air is malarial and lethal.

Yes, I say, "Back to Kant," who was a wiser man, and held more truth than those who have been following out his principles. But when we go back to Kant, let it not be to take his fundamental positions on trust. In particular, we should, I think, in the exercise of our criticism abandon his critical method. If this is not done we shall have—as we have had for the last hundred years—a succession of systems, each laying hold of and devouring its predecessor. We may cut down the tree to its roots, but if we allow the roots to remain, a new tree, or new trees of the same kind, will spring up. How often have we had a new philosophic treatise opening with the statement: "At this point Kant has not followed certain principles to their logical consequences; let us do this for him." Or, "Here is a principle which Kant has overlooked; let us introduce it and build it into the system."

For the present there is a reaction against the building of new systems of philosophy. The world has become weary of them. The tendency now rather is, in the lectures of the German universities, and in the books written in the English language, to give us histories of the opinions held in the past; and we have thereby been gainers, as at-

tention has been called to the truth to be found in all our higher philosophies from the time of Plato and Aristotle in ancient times, and that of Descartes and Locke in later times; and at the same time to the errors both of an extravagant dogmatism and of a low empiricism, which it is hoped may be kept from ever appearing again by the way in which they have been exposed.

Yes, "Back to Kant," but do not stop there. Back to Reid with Hamilton, back to Locke, back to Leibnitz, back to Descartes, back to Bacon, back to Saint Thomas and Abelard, back to Augustine, back to Marcus Aurelius, back to Cicero, back to Aristotle, back to Plato. All these have taught much truth; let us covet the best gifts and accept them wherever they are offered: in ancient Greece and Rome, in Germany, in France and Italy, in Great Britain and America. Here the method of induction with criticism may guide us in the selection—may give us the magnet wherewith to draw out the genuine steel from the dross mixture.

"Back to Kant," but back beyond him to what he looked to, or should have looked to, and by which his views and ours are to be tested, to the facts of our mental nature.¹

¹ I should be sorry to find our young American thinkers spending their whole time and strength in expounding Kant or Hegel. Depend upon it, the German philosophy will not be transplanted into America and grow healthily till there is a change to suit it to the climate. By all means let us welcome the German philosophy into this country, as we do the German emigrants; but these emigrants when they come have to learn our language and accommodate themselves to our laws and customs. Let us subject its philosophy to a like process. Let it be the same with the Scottish philosophy: let us take all that is good in it and nothing else, and what is good in it is its method.

I have rather been advising our young men not to seek to transplant the German philosophy entire into America. But as little do I wish them to transplant the Scottish philosophy. It is time that America had a philosophy of its own. It is now getting a literature of its own, a poetry of its own, schools of painting of its own; let it also have a

Of the existing philosophies the German is at this present time the most powerful. If the others, if the Scottish, the English, the French, are to regain their influence, they will have to strike out some new courses fitted to raise enthusiasm, and hold out hope of discovery to encourage research. They may study the dependence of mind on body, and thereby connect their inquiries with the science of the day. They may also apply psychology to the art of education, and show how the mind is to be trained. But whatever else they do, they must take up and enter into the spirit and life of those great questions which have been discussed in philosophy since reflective thought began. It is because they have done this, that the philosophy of Kant and the Germans has been found so attractive to inquiring youths. Let us notice and ponder the grand truths which have thus been brought before us, but let it be to give a clear account of their nature and separate them from the error with which they have been combined. Let us believe and acknowledge

philosophy of its own. It should not seek, indeed, to be independent of European thought. The people, whether they will or not, whether they acknowledge it or no, are evidently the descendants of Europeans, to whom they owe much. They have come from various countries, but on coming here they take a character of their own. So let it be with our philosophy. It may be a Scoto-German-American school. It might take the method of the Scotch, the high truths of the German, and combine them by the practical invention of the Americans. But no: let it in fact, in name and profession, be an independent school. As becometh the country, it may take, not a monarchical form under one sovereign, like the European systems, let it rather be a republican institution, with separate states and a central unity. To accomplish this, let it not be contented with the streams which have lost their coolness from the long course pursued and become polluted by earthly ingredients, but go at once to the fountain, the mind itself, which is as fresh as it ever was, and as open to us as it was to Plato and Aristotle, to Locke and Reid, to Kant and Hamilton.

with Plato, that there is a grand, indeed a divine Idea, formed in our minds after the image of God and pervading all nature; but let that idea be carefully examined and its forms exactly determined; and it is for inductive science, and not speculation, to ascertain what are the laws and types which represent it in nature. We should hold with Aristotle that there are formal and final as well as material and efficient causes in our world; but it is for careful observation to find out the nature and relation of these, and to show how matter and force are made to work for order and for special ends. We may be as sure as Anselm and Descartes, that in the mind there is the germ of the idea of the infinite and the perfect; but we should claim the right to show what the idea is, so as to keep men from drawing extravagant inferences from it. Let us see as Leibnitz did a pre-established harmony in nature; but we may argue that it consists not in things acting independently of each other, but in their being made to act on and with each other. We can not err in attaching as much importance to experience as Locke did; but let us maintain all the while that observation shows us principles in the mind prior to all experience. We should be grateful to the Scottish school for using principles of common sense and fundamental laws of belief; but we should require them to show how these are related to experience. We may allow to Kant his forms, his categories, and his ideas; but let us determine their nature by induction when it may be found that they do not superinduce qualities on things, but simply enable us to perceive what is in things. I believe with Schelling in intuition (*Anschauung*); but it is an intuition looking to realities. We may be constrained to hold with Hegel that there is an absolute; and yet hold firmly that our knowledge is after all finite, and insist that the doctrine be so enunciated that it does not lead to pantheism. We

should reject a sensationalism which derives all our ideas from the senses, and a materialism which develops mind out of molecules; and yet be very anxious that the physiology of the nerves and brain should aid us in finding out the way in which the powers of the mind operate. I turn away with detestation from the pessimism of Schopenhauer and Von Hartmann; but they have done good by calling the attention of academic men to the existence of evil, to remove which is an end worthy of the labors and sufferings of the Son of God. We may believe with Herbert Spencer that there is a vast unknown above, beneath, and around us; but we may rejoice all the while in a light shining in the darkness. Let us receive with gratitude the whole cabinet of gems which our higher poets have left as a rich inheritance; but before they can constitute a philosophy they must be cut and set by a skilful hand; and this must be done as carefully as it is with diamonds, and all to show forth more fully their form and beauty.

HERBERT SPENCER'S PHILOSOPHY

AS

CULMINATED IN HIS ETHICS

EXAMINED BY

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Part First.

SPENCER'S PHILOSOPHY.

SECTION I.

THE PHILOSOPHIES WHICH HAVE INFLUENCED MR. SPENCER.

THE house which Mr. Spencer has built is a very imposing one. He has been engaged for a great many years in erecting it. He has reared it tier upon tier, and is now putting on the copestone. Many of our younger men, especially those who have been trained to look upon physical science as the main if not the only branch of true knowledge, have the most perfect confidence in its stability, and feel safe in taking up their abode in it. Others, older and professedly wiser, think they discover great oversight in the erection, and point to fractures and rents appearing as it settles.

There is no man so self-contained as not to be influenced by his surroundings—as Mr. Spencer calls it, his environment. We read of the *Origines Platonicæ* and that the *Homerus Philosophorum*, though one of the most original thinkers that ever lived, got his doctrine of the fleeting nature of matter from Heraclitus, of the permanence of things from Parmenides and the Eleatics, and his grand ideal theory from the numbers and forms of Pythagoras.

We may in like manner, without disparaging Mr. Spencer's independence, discover fountains from which the stream of his philosophy has arisen. We need not seek these far up on the heights of antiquity, for which he has not much reverence. We find them in men who lived and were honored in the age immediately preceding his own.

First, he drew his metaphysics, that is, first principles, from Sir William Hamilton and Dr. Mansel, who constituted the prime constellation in the heavens when the young thinker, at that time an engineer, began to inquire into the mechanism of the universe. Hamilton, in this respect swayed by the philosophy of Kant, argues in his *Discussions* that the mind knows only phenomena in the sense of appearances, and thus landed himself in the conclusion that all our knowledge is relative, and that we know nothing of the reality or nature of things. "All that we know is phænomenal, phænomenal of the unknown" (*Dis.*, p. 608). Mansel in his Bampton Lectures applied this doctrine to the defence of religion, and sought to undermine the pillars of rationalism—not foreseeing that the argument which overthrew knowledge would soon come to be directed against faith. The young Spencer took up the prevailing philosophy of his time, and carrying out Hamilton's principles of relativity and nescience, he evolved his unknown and unknowable, which he allotted as a grove to religion.

It so happened that when Hamilton published his *Discussions*, I was just issuing a new edition (the fourth) of my work, *The Method of the Divine Government*, and I felt it to be my duty in an appended note to oppose what would now be called his Agnosticism. I predicted that the nescience which he defended would lead historically, as it led logically, to consequences which he did not contemplate. He wrote me that he meant to reply, but soon after he

was oppressed with bodily infirmity which prevented this. When Mansel published his Bampton Lectures, in which he applied the principles of Hamilton to the overthrow of rationalism, I reviewed the work in the *North British Review* (1859), and showed that some of his views as to the relativity of knowledge might be used to undermine all religious truth. In these circumstances I was not surprised when Mr. Spencer drove the doctrine of Hamilton and Mansel to its logical consequences, and made God and all reality unknowable. In a private correspondence which I had with Dr. Mansel, I urged him to reply to Mr. Spencer, which, however, he never did. Had he done so he might, I hoped, though I scarcely expected, have so explained the statements of Hamilton as to show that they did not logically issue in the philosophy of Spencer. As it is, the latter professes to proceed on the principles of the Scottish metaphysician and his Oxford follower.

Secondly, Mr. Spencer received an impulse from the philosophy of M. Comte. He started as a thinker when the reputation of the founder of Positivism was at its greatest height. This Frenchman had been speculating profoundly, as he thought, in his *Philosophie Positive* on the order and progression of the sciences. He holds that we may expect, first of all, to find those objects scientifically investigated which are the simplest, the least complicated, and the laws of which may be entertained with most ease and certainty, such as the relations of space in geometry. He supposes that science would then go on to the consideration of objects more concrete and complex, rising to astronomy, and thence, in order, to physics, chemistry, physiology, and social physics. The first contemplates phenomena the most general, the most simple, the most abstract, and the farthest removed from humanity, having

an influence on all others without being influenced by them. The phenomena considered in the last, are, on the contrary, the most particular, the most complicated, the most concrete, and the most directly interesting to man; they depend more or less on the preceding without exercising an influence on them.

Mr. Spencer does not adopt this theory. He has started a rival one. Comte shows how the sciences advance; Spencer shows how nature advances. Both make the progression from the more general to the more special. When Comte published his system I admitted that there was truth in it (*Meth. Div. Gov.*, B. ii., 2), but denied that it met all the development and classification of the sciences. Few people now adopt without modification the theory of Comte. Spencer has built a more compact structure. He stands up for a transformation of the homogeneous into the heterogeneous, exhibited in the universe in all, or nearly all, its details: in the aggregate of stars and nebulae, in the planetary system, in the earth as an inorganic body, in each organism vegetable or animal (Von Baer's Law), in the aggregate of organisms throughout geologic time, in the mind, in society, in all products of social activity. This theory will fall under our notice at a later stage. It will turn out in the end that there are phenomena which modify and limit it. Mr. Spencer cites from Comte "the doctrine that the education of the individuals should accord in mode and arrangement with the education of mankind considered historically," and agrees with him in holding "an analogy between an individual organism and a social organism," a doctrine, I may add, which may be traced back to Plato. Both speak of altruism, which they would substitute for love. Both begin with data derived from material science, and think thereby to account for mind and its operations. Both are apt to start with hypotheses which they seek to

verify by an accumulation of facts. I add that both are addicted to overlook facts as well as to observe facts.¹

Thirdly, Mr. Spencer avowedly owes much to the grand generalization of Von Baer, as to there being an advance in the vegetable and in the animal kingdoms, from the more general to the more special; and that there is a parallelism in this respect between the growth of the plant and animal from their seed and germ, and their progression throughout the long geological ages. Every scientific man was struck when this doctrine was first announced by its author, now an age ago. Mr. Spencer carries out this principle legitimately or (and) illegitimately to the evolution of the universe in all its departments.

Mr. Spencer has no claim to be regarded as the originator or author of the theory of development. There were anticipations of that doctrine in ancient times. The germs of it were floating through the air when Spencer began to think on these subjects, and Darwin was preparing to make extensive applications of it to brute and man. But Darwin is the organizer, the very embodiment, personification, and expression of it; and he evolves it in the confidence that it, as the fittest, will survive and will persist as a force till it brings all environment within its sphere.

It is now many years ago, and at a time when he was not known so extensively as he is now, that I had occasion to publish my estimate of him (*Intuitions of the Mind*, Part III., c. i. § 8). "His bold generalizations are always instructive, and some of them may in the end be established as the profoundest laws of the universe." I find that the American publishers of his works have been using this testimony of mine in their advertisements, and I have no objections

¹ This is my judgment on the somewhat keen controversy between Mr. Harrison and Mr. Spencer. Surely people may now see that whatever Mr. Harrison may be, he is not a philosopher.

that they continue to do so. But it is proper to state that I represented our author as a Titan making war against the gods that rule in Olympus, to which he seeks to rise not by slow and gradual steps but by heaping Pelion on Pindus. His system of science and philosophy is a vast structure, professedly and really, with broad if not deep foundations in natural, especially biological science, and towering into jurisprudence and ethics. This is its excellence, this is its defect.

SECTION II.

HIS METHOD OF PROCEDURE.

Mr. Spencer commands our respect by his terrible earnestness. He has an end to live for, and he lives for it. For it he has given up professional pursuits and profits; and for years immediate fame and popularity. For the last forty years a grand system of speculative physics, founded on the recent discoveries in biology, has been developing in his brain, and he must put it into shape; he must unfold it in spite of obstacles, with or without encouragement from surroundings.

We have seen what were his antecedents and stimuli. Let us now view him using his great powers to accomplish his end. He is distinguished for two very marked intellectual capacities. He has an unsurpassed aptitude for comparison and generalization. He can detect remote analogies and put great varieties of things into a few comprehensive groups. Present any natural object, and he will at once allot to it its place in the system of things. He has also a strong tendency to trace effects to their causes, back to their origin in the unknown. Call his attention to a fact and he will show you how it has been evolved. As a result

of all this there is a comprehensiveness, real or apparent, in all his speculations which greatly attracts young and ambitious thinkers, who are delighted and flattered by the thought that they can comprehend the whole knowable universe. His is one of those larger minds referred to by Bacon, which in observing resemblances is apt to overlook differences and exceptions. He can by his constructive intellect evolve all things out of an original star dust, and pursue its course of differentiation and integration till it is dissolved into the vapor in which it originated. But it may be doubted whether any human intellect can carry on and finish the work which he has undertaken. Of this I am sure, that it cannot be accomplished till science, as a whole, and certain departments of it, have reached a much more advanced stage than they have yet done.

His method is to set out with an hypothesis, say that of development, probably containing much truth, but, it may be, guilty of some omissions and requiring to be limited on all sides. He then gathers facts to verify his hypothesis. His method is deductive rather than inductive. He examines facts by the old Greek methods of analysis and synthesis, very sharp instruments, but somewhat perilous because they are so sharp. A great part of his work is described by him as synthetic, the synthesis being facts cut, joined, compressed, and compacted by his own comprehensive mind. His method is not just that enjoined by Bacon, who recommends us not to anticipate but follow nature, to let the facts suggest the laws (axioms, he calls them), and not to neglect noticing the apparent exceptions, which are to be entertained as Abraham entertained strangers, who turned out unawares to be angels. "We shall have good hope of the sciences," he says, "when by a true ladder and steps not broken or gaping we rise from particulars to minor axioms, and thence to

middle axioms, rising higher and higher, and thence to the highest of all." Bacon shrewdly remarks that "a cripple on the right road will beat a racer on the wrong," adding language which might at times be applied to Spencer: "This is farther evident that he who is not on the right road will go the farther wrong the greater his fleetness and ability." In his eagerness of thought, our author is not very much inclined to submit to this slow but sure procedure. Possessed of great speculative ability, he is apt to leap from mountain-top to mountain-top without even looking upon the plains or examining the valleys below, in which, after all, are to be found the connections of those lofty ranges which he is so fond of tracing. We may have occasion to call attention to some of these lower facts, obvious to the common observer, but which he has overlooked. He feels that he has a special aptitude to interpret facts. Give him facts and he will explain them. Others, however, without denying his facts, will feel themselves justified in interpreting them otherwise.

At this present time Spencer occupies much the same place among the English-speaking peoples as Hegel did among the pan-Germans an age ago. Both are characterized by speculative abilities of the very highest order. Both would bring all nature, mind and matter, under their all-embracing systems, which are as wide as the horizon and as undefined. Both have their minds so filled with their own grand views that they are not inclined to look at the views taken by others, or at the facts which seem inconsistent with their generalizations. Both have had mighty influence over young men bent on having everything explained, by the dogmatism of their assertions and the comprehensiveness of their theories, which seem to explain what cannot otherwise be accounted for. In other respects they widely differ. Hegel had an extensive,

though by no means an accurate, acquaintance with the philosophies of ancient Greece and modern Germany ; but when he criticised Sir Isaac Newton's discoveries, he simply made himself ridiculous. Spencer, on the other hand, has a large knowledge of the late discoveries which are bringing organisms under the dominion of law—more, however, as an amateur than a practical experimenter ; but has not, so it appears to me, studied the actings of the human mind as revealed to consciousness. His apprehension of these and his account of them are commonly given under conceptions and in language derived from matter and motion. Hegel's sun has now set, leaving behind only the glow of a mighty reputation. I believe that you could now count all the thoroughgoing Hegelians in Germany on your ten fingers, and all the eminent Hegelians out of Germany, including those in Naples, Oxford, Glasgow, and Concord, on your ten toes. Some do not scruple to call him a pretender and a charlatan. Spencer's sun is now at its zenith. What may be the estimate of his philosophy at the end of this century I will not take upon myself to predict. As embracing so many established facts, I believe that there is much in his system which will abide, and I adhere to the opinion that "his bold generalizations are always instructive, and that some of them may, in the end, be established as the profoundest laws of the knowable universe." It is one of the offices of thinking men in this age carefully to examine the structure which he is rearing, and while they admire its massive walls they may come to discover rents in it, indicating an unsettled and unsettling foundation.

SECTION III.

HIS METAPHYSICS.

Mr. Spencer does not look on himself, and does not wish others to regard him, as a sceptic; on the contrary, his philosophy demands a large amount of faith. In particular, he admits, as all profound men do, certain truths as incapable of being proved, but which must be accepted by all. He admits, "In every case, by every school, something has to be assumed" (*Psych.* ii., 390). We cannot prove this something, but we can show that we are entitled to assume it. He started as a speculator when Hamilton and Mansel, largely following Kant, were the reigning metaphysicians of Britain, and he takes his views of the character and marks of first truths largely from them, modifying but not improving them. "The inconceivableness of its negation is that which shows a cognition to possess the highest rank—is the criterion by which its unsurpassable validity is known." "If its negation is inconceivable, the discovery of this is the discovery that we are obliged to accept it. And a cognition which we are thus obliged to accept is one which we class as having the highest possible certainty" (*Psych.* ii., p. 407).

This criterion of first principles is so far a sound one, and may serve some good purposes. But it is mutilated, and has not been put in the proper form. I cannot give in to the maxim that a man should believe a proposition simply because he cannot conceive or act otherwise. This is a kind of fatalism against which the heart if not the head is apt to rebel. I hold in opposition to the prevailing agnosticism, founded by Hume and favored without

their intending it by Kant and Hamilton, that man can so far know things and the relations of things. He knows self as thinking and feeling. He knows body as extended and resisting his energy. He perceives at once certain relations in things thus known, as, for example, that these two straight lines cannot enclose a space, and that these two things *plus* other two things make four things. He knows all this because he perceives things and what is in things. This gives us a criterion not only of "unsurpassable validity," which "we are obliged to accept," not only of the "highest class" and the "highest possible certainty" *to us*, which is avowedly all that is known to man. This is a hypothesis which supports itself on agencies which are very much unknown. We know nothing of the processes by which the virtue has come down from one individual and one race to another. The mystery of the virtue supposed to descend in apostolic succession is nothing to this. We cannot tell what was the experience laid up by the ascidian and descending down through the fish to the ape and early man. Was it conscious or unconscious in the ascidian? If not, when did it become conscious? What form did it take? It is an hypothesis which it is impossible to refute because it is an hypothesis which cannot spread out its proof. As an hypothesis it does not explain the whole phenomenon. We have, in fact, no anticipation of mathematical or metaphysical or moral truth among the lower animals.

I admit that heredity may explain so much: it may account for the formation and the action of the nervous system. But some of us deny that nervous action is mental action. I deny that mere nervous action can become moral action. The great body of our scientific men are proclaiming that bodily action and mental action are entirely different. The brain and nerves are not the mind, they are

merely the organ of the mind. It is altogether gratuitous to assume that the heredity which can fashion our nervous structure can also form our fundamental laws of knowledge and belief. It would be difficult to prove that the brain is anything more to the mind than an organ of sensation and locomotion.

Supposing that the brain or the cerebro-spinal mass is the organ of the mind, it may be able in a great variety of ways to modify mental actions. It may constrain them to go in certain ways, and restrain them in others. The mind may be led to act in a particular manner by the ready concurrence of the nerves. On the other hand, when the organism does not co-operate, the thoughts and feelings may be greatly hindered. In this way a nervous structure may give tendencies which become hereditary. But this does not prove that the primary principles of reason are the product of brain or nervous action.

All this is the more evident when we consider what is the nature of our intuitions. They are of the nature of perceptions, of perceptions of things and the relations of things. We perceive that if two straight lines go on for an inch without coming nearer each other, they will go on forever without doing so ; and that from the very nature of a breach of trust, it must be evil. There is no proof whatever that there is any apprehension of such truths or any approximation towards them on the part of the dog, the horse, or the highest of the animals.

Even on the supposition that these cognitions and beliefs and judgments have been generated by the experiences of ancestral races, it might be argued that they are valid, and this on the principles of Spencer. They have all the authority of the lengthened and uniform experience. They can stand his criterion of truth. We cannot conceive that hypocrisy should be good, and so we argue that this truth

has "unsurpassable validity," and is of "the highest possible rank." I claim for it another validity. These truths, however generated, have the authority of the God who produced them, whether by development or otherwise. I feel myself at liberty to appeal to these first truths of our reason, whether speculative or moral.

Mr. Spencer adopts from Hamilton and Mansel the doctrine of the Relativity of all knowledge, that is, that we do not know things, but merely the relations of things in themselves unknown; their relations to us or the relations of phenomena or appearances to one another. I have been opposing this doctrine ever since it was expounded by Hamilton in his *Discussions*.¹ I maintain that in every act of sense perception and self consciousness we know self and things affecting self. True, we may not know things in themselves—in themselves is an unmeaning phrase; we do not know all about things, but we know them as things under the aspect in which they present themselves; in other words, we know things as presenting themselves to our senses external and internal. We have as good proof that we know things as that we know the relation of things. There is always some knowledge of things implied in order to know the relations of things to us or to one another.

SECTION IV.

THE UNKNOWNABLE.

The doctrine of Relativity leads and must ever lead to that of Nescience, or, as it is now called, Agnosticism. Spencer holds, indeed starts with a very pronounced form

¹ See *Method of Divine Government*, Sup. Art., and Art. Hamilton, in *History of Scottish Philosophy*.

of the latter. The one phrase, expressive of his creed, is the Unknown and Unknowable. This Unknown is a reality, is in fact the one reality; herein he differs from most agnostics, who know no reality. He argues that the known implies the unknown. It may be doubted whether his argument is conclusive. He cannot guarantee it by an appeal to his ultimate criterion, "the inconceivableness of its negation which is that which shows a cognition to possess the highest rank," for I can easily conceive that there is nothing beyond the known. I do believe, indeed, that there are things beyond our ken. I do so because always when I inquire I find there is something beyond what I as yet know. But the argument is not apodictic or demonstrative, guaranteed by a necessity of thought. It is quite conceivable that what is unknown may not on that account be unknowable; it may be known at some future time, or by farther research. I rather think the disciples of the school will abandon this unknowable as not a logical necessity, as meaningless and an incumbrance, and thus cut off from the philosophy the religion which its founder imagines that he has.

He allots this unknowable region to religion. I am not inclined to accept the gift he so graciously offers, as I do not and cannot know what it is. A thing utterly unknown can never engage the mind in any way, cannot raise any elevated conception or call forth any elevating sentiment. In order to emotion there must be an object of some kind to which it is directed. The unknown cannot evoke any feeling, except that which darkness produces, a vague and meaningless awe in no way fitted to fill or satisfy the mind. The rudest fetish worship, that of stocks, or stones, or animals, is more elevating than this, if indeed any one would think of adoring such an object. Paul tells us that he saw an altar to the unknown God,

but he does not say that he saw any one worshipping there. The belief in it, if any one could believe in it, can have no purifying influence on the heart and character, and can tend in no way to regulate the life; as it cannot be known whether the object, if there be an object, is good or evil, has or has not love to any thing. Instead of clinging to it the heart shrinks from it. A man feels that in such a region he would breathe as in vacuum. I suspect that most of those who adopt the philosophy will be prepared to abandon the religion as having no interest to them. Certainly no one would fight for the possession of this territory.

Though the discoverer of the unknown says it is unknowable, yet it turns out that he knows a great deal about it and gives us information about it. He tells us that it exists and is a reality; and surely this is some knowledge. He knows it to be without limit and speaks of it as a force or power. "We are irresistibly impelled by the relativity of our thoughts to vaguely conceive of some unknown force as the correlative of the known force" (*First Prin.* : p. 170). I quote this, not as a valid argument, but simply as showing what he knows of the unknowable—he is sure it is a force. "The belief in a Power of which no limit in Time or Space can be conceived, is that fundamental element in religion which survives all changes of form" (p. 551). He knows that it is a cause producing an effect, that it is the cause of all that is known. Surely the known cause of a known thing is so far known. There is profound truth in the doctrine of Aristotle, that things are known in their causes.

The truth is, his whole exposition is a mistaken and perverted account of the deep truths on which religion is based and which lead us up to a belief in a God so far known, and what we know cherished as our highest knowl-

edge. We have the known before us, and we discover it to be, as Sir John Herschel expresses it, "a manufactured" article and we argue a cause, a cause of a known effect, and itself known as producing the effect. How much more philosophic the reasoning. "The invisible things of God are clearly seen from the things that are made, even his eternal power and godhead." We know the nature of the cause from the effect which it produces. We know it to possess intelligence from the trace of these in the effects; to possess benevolence because the tendency of the effect is to produce happiness; and to possess rectitude because of the moral power placed by it in our nature. We thus rise to a "power" and a "godhead," who cannot be fully known to us because of his infinitude; but is so far known because we are made in his image—a God who hideth, but who also revealeth himself.

SECTION V.

ON EVOLUTION.

Mr. Spencer accounts for everything by development; by development out of the unknowable. But development is not a power, it is simply a process. I have shown that (*Series* No. III.) it is a combination, a corporation, an organization of causes. Take the evolution of plants and animals; it implies a combination of a number of forces, mechanical, chemical, electric, magnetic, vital—as they used to be called, cosmic as they are now called, including the panzoism of Spencer and the physiological units of Darwin; in fact so many, so varied, and complicated that science at its present stage cannot number them, or determine their nature. When we describe a plant or animal as

evolved, we mean that it comes from a combination—I believe a pre-arranged and adjusted combination—of agencies which cannot as yet be untwined and exposed individually to the view. The grand business of science in the age to which we have now come, is not to satisfy itself with statements about loose general processes, but to determine the exact nature of the powers involved in heredity, and the evolution of plants and animals. This will clear the way for settling what development can do and what it cannot do.

In conducting the investigation, two points must be carefully attended to. First, in inquiring into the development of an object we must begin with ascertaining accurately what it is, what is its present state. It is from what it is now that we argue it has passed through a certain process. If we wish to know whether the planets have been developed out of star dust, according to the theory of Kant and Laplace, we look to their present positions and movements, and find that we can show how these might have been produced by certain causes. It is of special moment that we proceed in this way to determine the generation of mental phenomena of any kind, say of mind generally, or of consciousness, or of any particular idea, say of beauty, or moral good, or infinity. We must begin the investigation with determining precisely what the phenomenon is, as it now is, and as it presents itself to us, how much there is in mind, how much in the power or idea which we expect to find developed. Without this, the theory constructed by us would be vague and valueless.

Secondly, we must see that the supposed developing causes be adequate to produce the effect. It is now generally acknowledged that the relation of cause and effect does not consist in mere invariable antecedence and consequence.

There must be some force, potency or energy in the cause. Scientists now speak of the effect being in the cause. I believe that in mundane causation, the effect consists of the agents acting as the cause in a new state. At all events, we must see that in the supposed developing cause, there is power to develop the precise product. We do not believe that a plant can generate an animal, or that thought can produce extension, or sensation give us the idea of moral good. I am to use these two principles in criticising Spencer's development theory. I am to insist on his determining what is the precise object which he is seeking to evolve, say life or sensation, or intellect or moral approbation. I farther insist that he find in the developing cause, what is sufficient to produce the precise effect.

The vulgar account of development is that it starts with atoms and rises to molecules, and masses, and plants, and animals with sensation, and thence to higher and higher intelligences; and now it is supposed to moral agents. Mr. Wallace, the co-discoverer with Darwin of the doctrine of natural selection, has been obliged in a late paper to refer this rise in a crude manner to spiritual agency. For this he has been exposed to ridicule by his school, perhaps justly. But his desire is somehow to fill the gap. Mr. Spencer, marching on with his seven-leagued boots, can step over these chasms without noticing them. Any one may see some of these fallen stitches (fa'en steeks, as Hugh Miller used to call them) in the fabric. The latest science has not been able to find that the inanimate can produce the animate, that there can be a *vivum* without an *ovum* or some kind of protoplasm. Huxley and Tyndall have honestly avowed this; Spencer, so far as I know, has uttered no sound on the subject.

Other chasms lie gaping before us. Can the unsentient produce the sentient? Can the unconscious develop the

conscious? Spencer's attempt to explain the origin of consciousness as we shall see when we come to consider his *Principles of Psychology* is about the greatest philosophic abortion of our day. He first describes the nervous system in a very elaborate manner. Then he brings in consciousness in the stealthiest way, without even attempting to explain how this mental quality can be generated out of the soft pulpy substance, the brain. He fails to notice the like difficulty as it presents itself in the rise of consciousness into the higher attributes of mind, such as judgment and reasoning, emotion and will. As might be expected, he sees no difficulty in developing morality from accumulated experiences of sensations becoming hereditary.

Those who would account for the rise of the lower natures into the higher, say the ascidians into the fish, of the fish into the monkey, and the monkey into man, are shut up between the horns of a dilemma if they follow the acknowledged principles of causation. This power to rise from the original molecules up to man was either in the original molecules or it was not. If it was in the molecules, then there must have been in it all the mechanical, the chemical, the cosmic forces; in fact, it must be a power only a little lower than the infinite,—of all which we have no evidence whatsoever. If the other alternative be taken, and it is supposed that in order to produce the higher qualities and beings new powers have always to be introduced, the question arises, Whence did these powers come? If it be said by constant small increments, it removes the difficulty only in appearance. For the increments could only give what they have, and which they have got from the original powers. In fact, the law of development with heredity is after all merely a wide empirical law. A law, as I understand, does not rise beyond the empirical state and become a rational law till the causes

operating have been determined. For the present there might be a truce in the war between religion and science as to development. The religious man believes that all the operations of nature, whether coming by development or otherwise, are from God. Let both the religionist and the scientist acknowledge that we do not know what are the causes which have brought in these higher powers, such as sensation, consciousness, intelligence which have appeared as the ages advanced.

SECTION VI.

HIS DATA OF PHYSICS.

Mr. Spencer can tell us how the universe is developed. The agents by which this has been accomplished are said to be SPACE, TIME, MATTER, MOTION, and FORCE. This is so far a good enumeration. But we shall see that the author is guilty of at least one great omission.

I believe that all these agents, or data, as he calls them, are made known to us by our native powers of knowledge or intelligence. They are perceived by us everywhere. We know objects in space by the senses—I believe by all the senses: by sight, a surface; by muscular sense, a resisting object; and by the senses of hearing, of taste, and smell, our extended organism as affected. By an easy process of abstraction we can in thought separate the space from the objects in space. We know Time in the concrete in all our memories: we recognize an object as having been before us in time past, and we separate the time from the event in time, and thus have the idea of pure time. We know Matter, our own bodies and bodies affecting them, by all the senses; these with their properties, such

as extension and resisting energy. We know Motion by the senses, always with a brief exercise of memory, recalling the past and watching the body as it goes on from one place to another. Force is also an intuitive perception—certainly by the muscular sense, probably by all the senses: by the eye we know vibrations of light; by the ear, vibrations of air; by the smell, of vaporous matter; and by the taste, of fluid substance striking on the organism. These are agents running through all Nature, in fact constituting the material world. Our author has shown that these are mixed one with another. In particular, Force is exhibited in them all. To express their relation in one sentence: Force puts Matter in Motion through Space in Time.

I admire the ability displayed in the deductions which he draws from the natural and necessary operation of these agents. He has in his *Principles* enumerated and propounded certain profound laws of the universe as the issue of the action of these Data. Starting with the Persistence of Force as the fundamental agent, he shows that there must follow the Instability of the Homogeneous and the Multiplication of Effects. As the issue “there will first be Universal Evolution followed by Universal Dissolution.” “The Dissolution undoes what the Evolution has done.” He shows that “the Concentration of Matter implies the dissipation of Motion; and conversely, the Absorption of Motion implies the Diffusion of Matter.” “Evolution and Dissolution together make up the entire process through which things pass.” (See last Chap. of *First Prin.*) These I regard as the grandest of all Mr. Spencer’s generalizations. I allow that this is the tendency of the agents he calls in, and these must be the results, if there be no other powers to modify them.

It will be necessary here to inquire what is the precise nature of his Data. He describes them as “manifestations

of the unknowable" (*Prin.*, p. 143). I remark in passing that if these be manifestations of the unknown it is no longer unknowable, for a thing is known by its manifestations—the light is known by its dispelling the darkness. But I do not enlarge on this. He speaks of these Data as being known. He treats of them not under Part I. The Unknowable but under Part II. The Knowable. He speaks of them constantly as the known. It has to be added that he does not represent them as being known as things. The things known are after all unknown. They are known merely as phenomena, as appearances, of a thing unknown. They are unknowable as realities. He tells us expressly "that Space and Time are wholly incomprehensible. The immediate knowledge which we seem to have of them seems, when examined, to be total ignorance." He says the same of the others, thus: "the nature of power cannot be known" (*Psych.*, Vol. II., 103).

He insists that "the one thing permanent is the unknowable reality." But how does he know that the unknowable exists and is a reality. We can from the known rise to the unknown, and thus make it so far known; thus we can often discover the unknown cause of a known effect, and know so much of the cause from its effect. But can we logically rise from an unknown thing, or unknown things, such as matter and force, motion, space, and time, and reach a reality, and this the only reality? No doubt the thought of unknown does imply the thought of known, but it does not necessarily imply the existence or reality of the known or even the unknown. A similar remark may be made of known implying the unknown; it implies the thought but not the existence of the unknown. We have here, I think, the most confused and baseless metaphysics to be found in the history of speculation. We have the known to be no reality, and the unknown the

only reality. The known is not known, and the unknown is known to be the only thing that has being. This philosophy cannot satisfy the heart, for it has nothing to engage us. It does not satisfy the head, which is told that it has a known which yet may have no reality, and is left only with a reality which is unknowable. The mockery both to head and heart is completed when it is told that this unknowable is God and the sphere of religion.

In No. III. of this Philosophic Series I have shown that development is organized causation, or an organization of forces to produce an effect and secure progression. In evolution we are to look for causes throughout. When it is alleged that any one thing, material or mental, is developed, we are entitled, we are bound, to inquire what it is evolved from. And then we are required to ask whether the alleged cause is competent to produce the effect. Thus if any one says that mind is developed from matter we should insist on his showing that matter has in itself a causal power or a persistence of force to produce so different a thing as mind. If he says that thought is evolved out of nerves, we may demand of him to prove that there is potency in the soft pulpy substance to produce thinking, say that of Plato or Aristotle, of Bacon or Newton. If he cannot show this, we may argue that as space and time and matter and physical force are original so also is mind; some would add that so also is life.

There is thus one great omission—there may be more—in his enumeration of the original agents from which the actual phenomena of the world are developed. In this process he does not call in mind. He does admit the existence of mind fully, but he evolves it from his five physical powers. Farther on I mean to examine carefully his development of mind from nervous action. It is enough for the present to call attention to the hiatus in his pro-

cess. I hold that he should have assumed mind as well as matter as among his original data. The one is as necessary as the other if we would account for the whole action and disposition of nature. Everybody acknowledges that in this advanced geological stage psychical action plays an important part in the action of the lower animals, and, above all, in man. The great body of scientific men are not inclined to allow that mind can be evolved from matter; a large number have asserted that we cannot even conceive of it being so. If this be so there is a mighty gap in his edifice.

As there is mind in nature, I believe that it discovers traces of mind above nature, arranging and ruling nature. Mr. Spencer traces all action, and in particular all development, to the persistence of force; but force is blind like all the other physical agents mentioned. A persistence of force might be a persistence of disorder, of pain and misery. He seems to feel this, and calls in an unknown, but which I regard as so far a known, to account for what we see of law and order in the world. He knows this unknown to be a power. I insist that we further know it to be a power of intelligence and benevolence, spreading happiness and promoting virtue, and I have a soul to discover this and lead me to love the being in whom these qualities dwell. Mr. Spencer has overlooked all this, and in consequence cannot give anything like a satisfactory account of the origin or of the present state of the universe. We feel so as we follow his development; we feel that there is something left out. It is as if one would give an account of the British Constitution and leave out the crown; of a cathedral, and never speak of the architect.

SECTION VII.

BIOLOGY.

He carries out his physical data first in Biology. This is the science in which there is the brightest prospect of discoveries being made in the present day. Mr. Spencer rushes into the department with the eagerness and vigor of those who hasten to a newly discovered mine. He has a very considerable acquaintance with animal and vegetable nature—scientific men are apt to say more as an amateur and a thinker than a practical worker and experimenter. I have no very strong objections to his views on this subject, except to urge that a considerable number of them cannot be regarded as established. Many of them are eminently suggestive, and may be proven—or disproven—at some future time. So far as inductive science has gone, we have no unequivocal cases of life coming from the lifeless. *Omne vivum ex ovo* is still true, and Mr. Spencer has no right to evolve living creatures from the five physical agencies which he takes as his data. So far as I have observed, he does not decide for or against spontaneous generation. But the whole spirit and tendency of his system is in favor of life being developed from the common elements, and the powers mechanical and chemical. Like most living naturalists, he does not adhere to the old faith in a separate vital force. For this doctrine I may say I have no partiality; the business of science is now to break up whatever truth is in it into its separate parts and to determine their laws scientifically. In following out this method Darwin calls in Physiological Units, going down from father and grandfather to children and grandchild-

dren, and in this way only can he account for heredity and the likeness of the young to their ancestors. In like manner Spencer calls in a Panzoism to account for the wonderful developing powers of life. These certainly are vital powers; and they may possibly, or, if any one insists, may probably, be resolved into the physical powers with which our author starts. This doctrine, as it appears to me, in no way tends to undermine religion, and I am not inclined to fight against it. But it must be proven, which it has not yet been, before it can be employed in rearing a system.

In many cases he lays down laws—at times very dogmatically—which cannot be regarded as established. Thus, he says, without giving proof, that the cerebellum is an organ of doubly compound co-ordination in *space*, while the cerebrum is an organ of doubly compound co-ordination in time (*Psych.*, i., 61). He says this hypothesis is reached *à priori*. I cannot find any proof of it either *à priori* or *à posteriori*, and I know no physiologist of eminence who sanctions it. The same may be said of several other laws laid down by him confidently.

He has made an elaborate attempt to find out what life consists in, and to construct a definition of it. I think he has not been successful. He criticises the definitions which have been given by eminent thinkers, and shows successfully that they do not fully fulfil their end in bringing into view all the properties of life and giving us its differentia. His own definition is not more satisfactory. As he chases it, it flees before him, and escapes like the rainbow when he would catch it. In the end he makes it "the continuous adjustment of internal relations to external relations" (*Biol.*, ii., 80). This would apply to many other things: as to the earth in its relation to the returning sun in spring; to a mother's house visited every week by a

son ; to a college receiving its students in autumn ; to the Capitol at Washington being occupied by members of Congress, and the Houses of Parliament in Westminster opened to the Lords and Commons. He misses the very differentia of the thing defined. What he should have brought out to view are the internal relations which are adjusted to the external relations of air, and food, and such like objects.

SECTION VIII.

HIS PSYCHOLOGY.

In his two elaborate volumes on Psychology his aim is not to give an account of the operations of the mind and to classify them, but to show how they are developed from the physical data which he has enunciated. He acknowledges that the truths here to be set down are truths of which the very elements are unknown to physical science (*Psych.*, i., 98). Still he strives to get these elements from physics. Students of mind commonly hold that mind is chiefly made known by self-consciousness or the inner sense, even as matter is made known by the external senses. But our author does not observe so carefully and intelligently the phenomena of the inner world by the inner sense as he does those of the outer world by the outer senses. He admits readily that mind exists and that it differs from matter. He treats psychology as a separate department of science. But it seems to me that he is not a master of the science of mind as he is of mechanical science. He draws mind from nerves ; indeed, he identifies the two and can scarcely be made to distinguish between them. By confounding them he thinks he can generate mind out of matter.

From this place onward it will be necessary to insist on the two principles explained (Section V.), as to, first, our having it clearly defined what is the present state of the object supposed to be developed ; and secondly, finding in the development a cause adequate to produce the precise effect. Mr. Spencer violates the first of these principles in his account of mind where he leaves out some of its characteristic phenomena. It is only by doing so that he is able to impart any plausibility to his theory of the evolution of mind. He does not state, and apparently does not see, that we have a knowledge of self in consciousness, of self as remembering, imagining, thinking, approving, condemning, willing. He evolves conscience, but gives it no special cognitive power or authority. He denies free-will in the most emphatic manner, and declares it to be inconsistent with the progress of the race as secured by the march of development. He does not condescend to notice the high ideas which the mind can entertain of moral good, of holiness and infinity, though he speaks of the unknowable as infinite.

He also violates the second principle and does not find a cause competent to generate mind. A large portion of his first volume is on the Nerves. I frankly acknowledge that I am not able to examine it critically as a branch of science. But this I know, that some who have studied physiology profoundly are not prepared to concur in his generalizations as to the way in which nerves and nerve-force are generated. I have no opinion on the subject, and if I had it would be of no value whatever. But I feel that I am competent, as any intelligent man is, to examine his derivation of consciousness, and all mental operations, from the soft pulpy substance, the nerves. I am ready to concur in the statement that there is a relation between the quantity of nerve-tissue and the quantity and complexity

of motion in the bodily frame. But this is a very different thing from saying that there is a like close relation between nervous force and mental force of all kinds, say literary, or mathematical, or philosophical force, or moral force—in following the good and resisting the evil. I do believe in the connection between nerve-force and certain forms of mental action, especially sensation and emotion. But certainly the two are not to be identified, but rather to be carefully distinguished. I do not look on the pulpy matter of the nerves as being the same as the force transmitted through them. But what is the nerve-force? I am not sure that Mr. Spencer or any one else can tell. All that I insist on is, that it is unwarrantable to extract mind with its endowments from such a substance as the nerves.

We must try here to ascertain what view our philosopher takes of mind. “Mind is certainly in some cases, and probably in all, resolvable into nervous shocks, and these answer to waves of molecular motion that traverse nerves and nerve centres” (*Psych.*, i., 156). There is a perpetual reference by him, and it may be added, by Prof. Bain, to nervous shocks. It is a convenient word for those who wish to conceal an ambiguity from themselves and others. A shock is defined by Webster as “Conflict; violent collision; concussion; external violence; conflict of enemies; sudden impression of fear, dread, or abhorrence; offence; impression of disgust,” etc. It is scarcely a word to be used in strictly scientific discussion; it may mean a violent concussion or collision, which is entirely material and made known by the senses; or a sudden impression of fear, dread, or abhorrence, which is made known by consciousness. Surely a violent concussion is one thing, and a dread arising from the apprehension of it is a different thing. If the concussion is a purely material movement, though it

should be that of an earthquake, there is no dread in it. The dread springs up in a soul that has an idea of danger to come from the collision. But the double meaning, the one real, the other metaphorical, allures the constructor of the theory to cover over the difference and identify the two.

He passes over the gulf in his usual way, by a leap, and calls nerve and mind correlates. "Changes in nerve vesicles are the objective correlates of what we know subjectively as feelings; and the discharges through fibres that connect nerve vesicles are the objective correlatives of what we know subjectively as relations between feelings" (*Psych.*, i., 270). This does not throw much light on the subject, though it seems to do so. To say things are correlates does not clear up their nature, unless we are told what the relation is. We know what such relations as husband and wife, father and child, are; but it is not so evident what is the correlation between nerve and thought. "What is objectively a wave of molecular change propagated through a nerve centre is subjectively a unit of feeling akin in nature to what we call a nervous shock!" (i., 184). Here he juggles with the ambiguous phrases object and subject: nerve is the object, and feeling the subject. But surely nerve exists whether it is or is not contemplated by mental feeling as an object, and mind or feeling contemplates a thousand things besides nerves. Whatever the connection, it is not that of subject and object; each is after all a distinct agent.

Nor is it correct to say, as Spencer says elsewhere, and as Professor Bain says so often, that they are sides of one and the same thing. For in the first place, mind has and can have no side, being a psychical or spiritual object; and secondly, matter, say this stone, exists whether the mind views it or not, and the stone has not mind as its

side. He tells us, "what we are conscious of as properties of matter, even down to its weight and resistance, are but subjective affections produced by objective agencies that are unknown and unknowable." This is making all our knowledge subjective.

But we must look a little more narrowly into what he makes of mind. "Mind is composed of feelings and the relations between feelings" (*Psych.*, i., 163, 210). This is a meagre account of mind, which embraces not only feelings, properly so-called, but knowledge, ideas, memories, imaginations, judgments, reasonings, resolves. Every one who has but a superficial acquaintance with psychology knows that under the ambiguous phrase, feeling, there are embraced two such different things as the bodily sense of feeling, such as we have when our finger is burned, and a higher affection, such as hope and fear, arising from an apprehension of good to come or evil to come. He knows the distinction between these, and calls them the centrally initiated and the peripherally initiated; the latter being Sensations and the former the Emotions. This formidable nomenclature does not bring out the essential distinction between the two affections; and it does not bring out the essential quality of emotion, which is an excitement called forth by an idea of something good or evil. Mind is capable of both these kinds of feelings, but it is not composed of either or both; it has intellectual acts and moral acts rising above mere feeling and not generated by feeling.

Let us notice how he generates the mental faculties. We begin with Sensation. "It is an integrated series of nervous shocks, or units of feeling, and by integration of two or more such series compound sensations are formed" (i., 127). Thus a man's love for his mother or his country consists of two more nervous shocks. It should be noticed that his shocks come in, as they are ever doing, to explain what

they cannot explain unless they possess the very quality of which they are supposed to explain the rise. A disturbance in a body not possessed of sensibility is one thing, and a sensation is another thing, and the disturbance can as little raise the sensation as quiescence could.

But of all things the rise of Consciousness is felt by the whole school to be the most difficult. They often use the phrase without knowing precisely what they mean. By consciousness, as I use the phrase, I mean self-consciousness, or the knowledge which the mind has of self in its present state, say as thinking, reflecting, musing. At this point our author feels a great difficulty in understanding how mind should at the same time be subject and object. I see no mystery and feel no difficulty. It is a fact falling constantly under our notice, and the metaphysician should acknowledge and proceed upon it. Just as I know the world without me so far, so I also know the world within.

But as often understood, consciousness is a general name for all those states of which we are conscious, all that is peculiar to mind as distinguished from matter. Taken in this sense, there is surely a difficulty which every wise man will acknowledge, in showing how it can have been developed from nerve force or from any material force. There is a deep gulf fixed here which no one has been able to fill up. Any one who looks into it thoughtfully will only feel the more keenly that it is impassable. Mr. Spencer, daring though he be in his speculations, can scarcely be said to have attempted it. He is describing the nervous system, and he brings in consciousness in the stealthiest manner. He speaks of separate impressions received by the senses, and of the need of some centre of communication, so that, "as the external phenomena become greater in number and more complicated in kind, the variety and rapidity of the changes to which the common

centre of communication is subject must increase, there result an unbroken series of these changes, and there must arise a consciousness" (*Psych.*, ii., 403). *There must arise a consciousness.* From changes and a centre—which has no consciousness. A cause at all adequate even in appearance to produce the effect is not even hinted at. He does not even acknowledge the difficulty; does not seem to see it in the eagerness of his march.

His account of the Ego, or, as I prefer calling it, the Self, is equally meagre and unsatisfactory. He speaks of it as a delusion to suppose "that at each moment the ego is something more than the aggregate of feelings and ideas, actual and nascent, which then exists" (i., 500). In this he is adopting the doctrine of Hume, who has no self different from impressions and ideas, or as the same is expressed by Mill, that mind consists of possibility of sensations. "If the ego is not present in the consciousness it is something of which we are unconscious—something, therefore, of whose existence we neither have, nor can have any evidence. If it is present in consciousness then, as it is ever present, it can be at each moment nothing else than the state of consciousness, simple or compound, passing at that moment" (*Psych.*, i., 500–501). In opposition to this mistaken view, I hold that in every act of consciousness we have a knowledge of self in its present state, say as thinking, not of thinking apart from self, or of self apart from thinking (or some other exercise), but of self as thinking.

He now comes to Intelligence, of which he acknowledges the existence as much as any spiritualist does. But what does he make of it? "Mind is composed of Feelings, and the Relations between Feelings" (ii., 192). "Intelligence is generated from the Relation of Feelings." "But mind is not wholly or even mainly Intelligence. We have seen that it consists largely, and in one sense entirely, of feel-

ings. Not only do feelings constitute the inferior tracts of consciousness, but feelings are in all cases the materials out of which in the superior tracts of consciousness, intellect is evolved by structural combination." We have come to another hiatus. He has not told us how from relation of feelings intelligence should arise. Surely the discovery of relations of any kind implies power of discovering relations, as Locke and nearly every psychologist has held, and yet he can give no account of the genesis of this power.

He tells us more precisely what intelligence is, and we should carefully notice what he says. "The primordial element of all intelligence is simply change." Expanding this, "successive decompositions of the more complex phenomena of intelligence into simpler ones, have at length brought us down to the simplest, which we find to be nothing else than a change in the state of consciousness. This is the element out of which are composed the most involved cognitions" (ii., 291-2). He proceeds to defend this position. "To be conscious is to think; to think is to put together impressions and ideas, and to do this is to be the subject of internal changes. It is admitted on all hands, that without change consciousness is impossible; consciousness ceases when the changes in consciousness cease. If then incessant change is the condition on which only consciousness can continue, it would seem to follow that all the various phenomena of consciousness are resolvable into changes." He tells us further, that "we can become conscious only through the changes caused in us by external objects" (ii., 291, 292). There is a call for criticism in every clause of these statements. A change always implies something changed; it is a new state of the substance changed, and the thing changed should have been specified, and this would have brought us to a mind undergoing the change. Surely every kind of change, say a change

in the temperature of the air, is not consciousness, or an element in cognition ; it must be a change in the conscious self. "To be conscious, is to think." I insist that to be conscious is to know self as acting. But he tells us, "to think, is to put together impressions and ideas," thus proceeding on the fundamental sceptical doctrine of Hume who put together impressions and ideas without things impressing or impressed.

I am not sure about admitting that without changes consciousness is impossible. I may be conscious of self as in pain. I believe Newton was conscious of thinking continuously for a time. So it is not true that consciousness ceases when there is no change. No doubt there are rapid changes in consciousness, but this because of the succession of ideas in the brain going on, always in the mind, or the new objects pressed on the mind from without. But it does not even seem to follow that the various phenomena of consciousness, all that I am now thinking, all that my readers are thinking when they read this, are resolvable into changes. I deny that we become conscious only through "the changes caused in us by external objects." I am glad to find *in us* appearing in spite of all efforts to repress it, and implying a self distinguishable from outward object. But in *us* there may be changes in our internal ideas, say from grave to gay, from fear to hope, from one judgment to another, without any external cause.

He speaks of Memory, but very briefly. It "pertains to that class of psychical states which are in process of being organized. It continues so long as the organizing of them continues, and disappears when the organization is completed" (i., 452). I do not understand what he means by disappearing. He acknowledges that there is a continuous thing abiding amid all individual remembrances.

I believe this, the self, may hold the acquired remembrance forever in this world and the next.

He speaks of Reason at considerable length and remarks, very truly, I think, that reason is dependent on previous intuitions and instincts which are more important than reason itself. He has a new analysis of reasoning differing from the syllogistic, and more complicated. I believe that the logic of Aristotle still holds its ground. The other theories of reasoning have had their little day and then disappeared. The two new analyses which have been given in our day, are likely to share a similar fate. That of Mr. Mill has very much passed out of sight. That of Mr. Spencer has not, so far as I am aware, been adopted by those who have followed his philosophy in other respects. According to the Stagyrte there are three terms in reasoning; it is a comparison of two terms by means of a third; (1) John Smith is (2) a man and therefore has (3) a conscience, as every man has a conscience. This is undoubtedly reasoning. But according to our author, reasoning needs four terms, which he elaborates into a very artificial and unnatural system, which would require a volume as large as this to examine, but which need not be examined till some who have studied logic come to accept it.

Part Second.

HIS ETHICS.

SECTION IX.

SEEKING A BASIS FOR ETHICS.

ALL his previous speculations are regarded by him as leading toward the grand end of finding "for the principles of right and wrong a scientific basis." We have now presented to us the basis of his ethics. Bacon has shown that science is to be tried by (not valued for) its fruits; and the English race have a sensitive disposition to inquire of every theory proposed to it what is its moral tendency. It was at this point that the weakness of Locke's theory of the origin of our ideas, which he derived from sensation and reflection, was first detected, and this by the grandson of his patron, Lord Shaftesbury, who showed that our idea of moral good cannot be drawn from either or both these sources. There are many inclined so far to follow Spencer's development theory as containing (as Locke's theory of the origin of ideas did) much truth, who are anxious to know what morality it has left us. Thinking men see that if development cannot meet the requirements of ethics, which are quite as valid and certain as heredity or any other laws of physiology, evolutionists will be required to modify their

theory and allow that while it can do much it cannot accomplish everything, and that it leaves many important facts to be explained by other, and, I may add, higher laws.

Our author is sensitively aware that there is great danger in a period of transition from an old faith to a new one. "Few things can happen more disastrous than the decay and death of a regulative system no longer fit before another and fitter regulative system has grown up to replace it" (*Pref.*). He assumes and asserts, without deigning to give any proof, that "moral injunctions are losing the authority given them by their supposed sacred origin." This is no doubt true of the school of which Mr. Spencer is the head, and of the *set* associated with him in London, and of his correspondents in various countries. But it may be doubted whether it is true of men in general, even educated men, or of Americans in particular, who I believe have as firm a faith in a morality prompted by an inward power and sanctioned by a Divine Power as they ever had, and are not likely to part with it readily. But there is danger—not, it may be, to our old men whose beliefs and habits are formed, but to the youth in our colleges, and especially in our scientific schools, and reading only evolutionary books and magazines, and are told that all things proceed from evolution which needs no God to guide it, that in throwing off their religion they also throw off their morality, which has been so intimately joined with it. Mr. Spencer will help them to part with their religion, which he consigns to a region unknown and unknowable, having attractions to nobody, but he would not have them abandon morality. He would not have them part with their religion too speedily; but if positive religion, that is religion with a God be found untrue, as he tells them, then intelligent young men cannot any longer believe in it and must by a

necessity of their nature part with it whether evil follows or not. He is evidently alarmed about this transition period when the old power has lost its authority and there is no one to take the place of the deposed king. So he hastens to give a new and scientific basis to morality, and this independent of God and of any inward law, both of which have been set aside. I have now to examine this new ethical theory, I trust candidly and impartially, and this, in the first instance, not upon its supposed tendency, which may be looked at subsequently, but upon the evidence advanced in its behalf.

SECTION X.

DATA OF ETHICS.

Mr. Spencer calls the last volume in his series by this title. He does not look on himself, and does not wish others to regard him as a sceptic; on the contrary, his philosophy demands a large amount of faith. In particular he admits, as all profound men do, certain truths as incapable of proof, but which must be accepted by all. When I found him calling his work *Data* I fondly wished (though I confess I scarcely expected) that he would have exhibited and expounded what we see when we look on moral or immoral actions, say on mercy or cruelty. I did hope that, using his own test of necessity or inconceivability, he would show us what "we must accept as true," as to certain voluntary acts, as, for example, that we cannot conceive deceit as good, or benevolence as evil. This would have furnished an unyielding basis to ethics, and on it the powerful builder might have erected a solid structure. But instead he reaches his data by a long inductive

and deductive process, in which he takes in the conduct of "all living creatures," even those who are not usually supposed to have any moral principles or responsibility, including the brutes, lower and higher, from the monad up to man.

By data he does not mean truths given or granted, he does not mean first truths to be tested, as I reckon, by self-evidence and necessity, but truths reached by a process. That process is, in fact, evolution. It will be expedient here to determine precisely what point we have reached in the process. We commenced with the unknown, of which, however, we somehow know so much : that it is a power, that it is everlasting, that it manifests itself in physical agents. Out of these have been evolved mind, sensation, consciousness, memory, reason, all drawn from antecedents which it seems to me have no power to produce them. It is now very generally granted that the effect is somehow in the cause ; but there is nothing in nervous tissue to produce such intellectual qualities as the knowledge of human nature by Shakespeare. We are now to look at our builder developing Conscience, Obligation, Duty, Love (I prefer the word to altruism), and Free Will, or ethical qualities all falling under the consciousness of every one. Again, we may discover the same defect, and this still more visible, of drawing a product from an incompetent cause, the defect, however, not being seen by our author, because he has not carefully looked at all that is in the cause.

SECTION XI.

VIRTUE AS CONDUCT AND A MEAN TO AN END.

He opens his work with declaring that moral good is a relation of means to end. I simply put in a caveat here. By our higher moralists virtue is represented as an end rather than a mere means. It is commonly spoken of as consisting in an affection of the mind, which is good in itself, say love according to law or benevolence, and not as a mere mean to something else, say happiness which in the system we are examining is the only good. But let this pass for the present, that we may consider his account of moral good as a means.

Virtue is conduct. I cannot accept this unless the phrase conduct has a certain meaning given to it. I would scarcely speak of the action of a wagon, a steam-engine, a balloon as conduct, at least I would not allow that it could be called virtuous. But in conduct there is commonly implied intention, more or less definite, we could talk of the conduct of a dog, or a horse. But I would scarcely call this ethical, though Mr. Spencer seems to do so. When we speak of good conduct in man, we denote intelligent action, being an act of the will having a good end in view. But let us see what our author characterizes as virtuous conduct.

"Morality," he says, "has to do with conduct," which he defines as "acts adjusted to ends, or else the adjustment of acts to ends." Conduct is good which accomplishes its end. "Always acts are called good or bad as they are well or ill adjusted to ends." A weapon is good when it inflicts an effective blow or wards off a blow. I have simply to interpose here that according to this view a robber's pis-

tol, or a burglar's key, or a draught of poison, or a forged bank-note is good. There is certainly nothing morally good in the mere adjustment of means to end. We have not yet got a scientific basis to ethics (*Data of Ethics*, c. iii.).

"If from lifeless things and actions we pass to living ones, we similarly find that these words, in their current applications, refer to efficient subservience. The goodness and badness of a pointer or a hunter, of a sheep or an ox, ignoring all other attributes of these creatures, refer in the one case to the fitness of their actions for effecting the ends men use them for, and in the other case to the qualities of their flesh as adapting it to support life." Surely we have not yet come to ethics. But he proceeds to show that from this initial adjustment, "having intrinsically no moral character, we pass *by degrees*" (mark the language) "to the most complex adjustments," which are moral.

Looking to sentient life, he shows that it is good or bad according as it does or does not "bring a surplus of agreeable feelings;" that "conduct is good or bad according as its total effects are pleasurable or painful;" and concludes that, "taking into account immediate effects on all persons, the good is universally the pleasurable." By these gradual steps he has led us up to ethics, declaring "that conduct with which morality is not concerned passes into conduct which is moral or immoral by small degrees and in countless ways."

The non-moral conduct is now developed into moral, and we see what his ethical theory is. He does not make moral good an affection or a voluntary act, or even, so far as I can see, a mental operation or state; it is whatever as a means on the whole promotes pleasure. We are not yet prepared to criticise this doctrine. It is enough for the present to indicate the objections that may be taken to it. I maintain that moral good is a mental act or state, and

that it implies intention. I admit that pleasure is a good, and that it is to be promoted as an end, but I deny that it is the only good, or even the highest end. In particular I deny that whatever as a means promotes happiness is necessarily a virtue. In order to be morally good it must be intended by the agent to promote happiness. A machine, such as a telescope, or electric telegraph, or a telephone, may greatly increase the resources and the happiness of the race. But surely we do not regard it as a virtue like honesty, and temperance, and righteousness, and self-sacrifice. But instead of pursuing this farther at present, let us notice what he makes of the progression of happiness, in regard to which he has established, as I think, a most important truth.

SECTION XII.

DEVELOPMENT PROMOTES HAPPINESS.

Under this head I have nothing but praise to bestow. He is successful in showing that as geological ages have run on there is a constant increase in the general amount of happiness. He cannot, indeed, tell us by his development theory how sensations of pleasure were produced; but having got these, he shows by that theory how they have become greater and greater, by the multiplication of the organs, as the animals become more special and more complex. Then there is the lengthening of the life of living creatures and its extension over wider regions. He thus summarizes: "We saw that evolution, tending ever toward self-preservation, reaches its limit when individual life is the greatest both in length and breadth; and now we see that, leaving other ends aside, we regard as good the conduct furthering self-preservation, and as bad the

conduct tending to self-destruction. It was shown that along with increasing power of maintaining individual life, which evolution brings, there goes increasing power of perpetuating the species by fostering progeny, and that in this direction evolution reaches its limit when the needful number of young, preserved to maturity, are then fit for a life which is complete in fulness and duration; and here it turns out that parental conduct is called good or bad as it approaches or falls short of this ideal result. Lastly, we inferred that the establishment of an associated state both makes possible and requires a form of life, such that life may be completed in each and in her offspring, not only without preventing completion of it in others, but with furtherance of it in others, and we have found above that this is the form of conduct most emphatically termed good. Moreover, just as we there saw that evolution becomes the highest possible when the conduct achieves the greatest totality of life in self, in offspring, and in fellow-men, so here we see that the conduct called good rises to the conduct conceived as best when it fulfils all three classes of ends at the same time."

I have quoted this passage for *two* purposes: one is to show how he is developing his theory of morals, which I am about to examine; and the other and present purpose, to exhibit the process by which he shows, I think successfully, how the means of happiness have been multiplying and intensifying on our earth as the ages roll on. He unfolds in his best manner the provision (he would not use the word) which has been made for securing this end, and also to prepare the way for the introduction of morality.

PHYSICAL operation tends towards this end. "To-day's wanderings of a fish in search of food, though perhaps showing by their adjustments to catching different kinds of prey at different hours a slightly determined order, are

unrelated to the wanderings of yesterday and to-morrow. But the higher animals, and especially man, display more coherent combination of motions ; and all tends towards the increase of pleasure. There is produced by the advance a balanced combination of external actions in face of external forces tending to overthrow it, and the advance towards a higher state is an acquirement of ability to maintain the balance for a longer period by the successive additions of organic appliances, which counteract more and more fully the disturbing forces."

BIOLOGICAL arrangements have the same tendency. There is a pleasure attached to the healthy exercise of the body thus securing an attention to that exercise, which secures an increase of happiness, and with him what promotes happiness is morality.

PSYCHOLOGICAL laws have the same influence. He gives here an epitome of his psychology, making it very much a department, not of the science of mind, as revealed by consciousness, but of the physiology of the nerves. He speaks of the three controls which restrain men—the political, that is government ; the religious, or fear of the supernatural ; and the social, or the influence of public opinion—and shows successfully that all these lead men to subordinate proximate satisfaction to ultimate good. He here comes in sight for the first time of what is entitled to be called moral good. "Now we are prepared to see that the restraints properly distinguished as moral are unlike those restraints out of which they evolve and with which they are long confounded ; in this they refer not to the extrinsic effects but their intrinsic effects." If he had said intrinsic character which makes them end in themselves and truly moral, he would have been in the region of ethics. But he merely carries us to the portal of the temple and does not enter.

SOCIOLOGY brings the same issue. Here he shows that the universal basis of co-operation is the proportion of benefits received to services rendered. He concludes: "The sociological view of ethics supplements the physical, the biological, and the psychological views, by disclosing those conditions under which associated activities can be so carried on that the complete living of each consists in and conduces to the complete living of all."

I have allowed our author to expound his argument in his own way. I accept his statement of facts as to the progression of nature. I admit that he thus establishes two very important truths. The first is that nature, as it progresses, makes for happiness. The means of enjoyment become higher as animated nature advances; is higher in the period of fishes than in that of mollusks, in the period of mammals than in that of fishes, and in that of man than in the times of the lower animals. This is a very interesting point, though it is not an ethical one. But he, so I think, establishes another point equally if not more important. It is that nature prepares for the introduction of morality. I hold, indeed, that till man appears with a conscience pointing to a moral law, there is and can be nothing either moral or immoral. We do not morally approve or condemn the acts of the reptile or the bird, of the dog or the cow. But there is a preparation made for man and for morality; a scene in which man can live, with the food needful for him, and in which he has opportunities of doing good, encouragements to do good, machinery to shut him up to good, and checks laid on the commission of evil.

I believe he has done good service by establishing these two truths. But he has not in all this entered the proper domain of morality, and least of all found a scientific foundation for the principles of right and wrong; he has

merely constructed a basement and has not laid a basis. Proceeding on his statement of facts, and interpreting them after the same manner, I discover other truths which furnish a foundation on which ethical science may rest securely.

SECTION XIII.

PHENOMENA OVERLOOKED BY HIM.

We must keep before us steadily the principle that in inquiring into the causes of things we should begin with determining precisely what the effects are of which we are seeking the causes. In settling what development can do we have to ascertain the nature of the things developed. I believe that Mr. Spencer has overlooked many of these. In particular he has no keen or steady perception of higher mental exercises, which he always identifies with material concomitants, such as nervous tissues. I proceed in this section to specify some general facts of a spiritual nature which he has passed by, though they fall directly under the eye of consciousness. These facts are as certain and as clear as any falling under the senses, and which have been specified by our author. Having supplied these omissions we will be in a position to determine whether he has explained everything by his ethical theory.

First. I discover design in these arrangements made to promote happiness and moral good. The tendency which he has so acutely detected implies very many and very varied adjustments of one thing to another, and of all things to a beneficent end. To what are we to ascribe these? Mr. Spencer is too much of a philosopher to attribute them to such meaningless things as chance and

fate. He is ready to admit that beyond the known phenomena there must be an unknown power to produce them. At this point I close in with him. This combination of adjustments producing a tendency toward an end, being an effect, implies a cause. From the effect we can argue, and so far know the cause. These arrangements toward an end point to an arranging and therefore an intelligent cause. Not only so, but as the end is happiness, they give evidence of a beneyolent cause. As the effect is a reality, so must the cause, the intelligent and benevolent cause of an effect implying intelligence and benevolence. These grand laws of beneficent progress revealed in biology seem to me to argue as clearly as the special adaptations of bones, joints, and sinew adduced by Paley, that there is an intelligence organizing and guarding them toward discoverable ends. The circumstance that God proceeds by development in so many of his ways does not entitle us to shut him out from his works. It has been shown again and again, as by M. Janet in his work on "Final Cause," that in development as an organic process there is as clear proof of design as in the frame of the animal. I see purpose in the arrangements which produce the beneficent tendency which Spencer has traced, quite as much as I see it in the constitution of a good society or a good government. I carry this truth with me as I explore the various compartments of nature, always keeping it in its own place, and I find it as a torch illuminating many places which would otherwise be dark.

Second. I discover another end in nature. I discover a moral end, or rather I discover that moral good is an end. I admit that the promotion of happiness is one end, the highest among the lower creatures incapable of appreciating anything higher. But when a certain stage is reached I discover this other end, like happiness, a good in itself

and an end in itself. Mr. Spencer mixes up the two ends, and they are often mixed together in the economy of nature; nevertheless they are distinct, and should be seen to be separate. The one end, happiness, is visible from the beginning. There seem to be anticipations of the other end, preparations for it in the animal reign, just as there were preparations for man in the cattle and cereals which preceded him and made it possible for him to appear. But the other end does not actually come forth till a morally endowed agent appears on the scene. The adjustment of means to end is a good thing, but before we regard it as morally good we have to see that the end is good, and that morally. A sword may be fitted to slay an enemy, but in order that the man be good who uses the sword he must employ it in a good cause. Happiness is good, but is there not also another good, and that is the love that promotes happiness, and the justice that guides and guards happiness and secures an equal means of happiness to all and each? Misery is an evil, but so also is the cruelty or deceit that produces evil. Benevolence is good, but is there not also a right and a wrong, and a justice which demands that every one has his due?

Third. At a certain stage there is the appearance of a being to know and appreciate the moral end. We have here an advance on what has gone before: an advance on the brutes, which had a love of pleasure, but not, therefore, a love of good; an aversion to pain, but not, therefore, an aversion to sin.

For our present purpose, which is not historical but ethical, it is not needful to determine how man appeared on the scene, and how he came to have a conscience to know the good and discern between it and evil. The advance is of the same kind as that which took place in the earlier ages from the inanimate to the animate, from

the insentient to the sentient, from the unconscious to the conscious, from the uninstinctive to the instinctive. Spencer and his school will no doubt account for this by development. The old alternative immediately comes in and requires us to make our choice between the horns. If it be answered that the morality was potentially in the original matter, I answer that there is really no proof that the moral power which led to the martyrdom of Socrates and the labors of Howard or Livingston was originally in the primitive molecules, and thence passed through the flaccid mollusk and the chattering monkey. I add, for argument's sake, that even on this supposition we might infer that all this must have been arranged by a prearranging and therefore an intelligent power foreseeing, or rather planning, the end from the beginning; which power must be a moral power lending its sanction to the whole results, and so to the moral monitor with its precepts and prohibitions. If the other horn is preferred, and it is asserted that man and his moral nature have come from a superinduced power, then I claim for that power the sanction of that Higher Power who has superinduced it. Some of our savans seem to be very anxious to prove their descent from the brutes. I admit and maintain that man's body is formed of the dust of the ground, and that he is so far after the image of the lower animals, or rather that the lower animals and he are after the same type. "My substance was not hid from thee when I was made in secret, and curiously wrought in the lowest parts of the earth. Thine eyes did see my substance, yet being unperfect; and in thy book all my members were written, which in continuance were fashioned when as yet there was none of them." But I am anxious to claim for man in general and for our profound thinkers in particular another ancestry. I claim that in

respect of their mind they were made in the image of God. We can discover traces of this even in the most degenerate of mankind, particularly in their capacity to ascend, as in the rise of the Britons from the days of Cæsar to their present state—a rise to which we can produce nothing parallel in any race of animals. Discovering it in the germ, even among savages, I see it taking its full form in our poets and philosophers, among our patriots and philanthropists.

It is enough for me that man has a reasonable and moral nature, no matter whence derived. Whatever may have been its historical growth, that conscience is now an essential part of my being. The higher state may have grown out of the lower, as the fruit out of the seed; but the fruit is valued for its own sake, and not because it has come from the seed. Whether man has come from the fish or no, he is no longer a fish but a man, with a moral nature containing certain perceptions and prerogatives, and if he murders a fellow-man I treat him in a way very different from that in which I would treat a fish which had seized and destroyed another fish. That moral nature declares that there is an essential and indelible distinction between good and evil. Its decisions can stand even Spencer's criterion of truth which "must be accepted." We believe that the man who suffers rather than tell a lie, that he who risks his own life to save a neighbor's, is right; and that the man who betrays a cause committed to him, or who murders a fellow-man, is wrong. I am as certain of all this as I am of the existence of an external world, as I am of my own existence; I cannot be made to believe otherwise. I am as certain that I reprobate the cheat and the seducer as I am that there is a cheat and a seducer, and that I live to reprobate him. Let speculators, I may say, wrangle about the historical antecedents of all this as it

suits them. I know what I perceive, and I follow, and must follow, my conviction, or rather I follow it not because of any external compulsion, but because I perceive it. Having such a moral nature, I inquire into its data and find it declaring that happiness is an end to be aimed at, but also declaring that moral good, love, and reverence for what is good is an end and a higher end.

Fourth. There is an intuitive principle prompting to the performance of moral good. It has been shown again and again that the utilitarianism under all its forms—and Spencer's ethics is a form of utilitarianism—requires an intuitive principle and motive to carry it out. It proceeds on the principle not only that I may but that I *ought* to promote the happiness of others as well as my own, that I am bound to promote the greatest happiness of the greatest number. There is no need of an intuitive moral principle to lead me to look after my own pleasures; though our sense of duty comes in to strengthen my purpose to sacrifice present pleasure for greater ultimate happiness. But why am I bound to promote my neighbor's good as well as my own? So far as I can see, the utilitarian theory, and the development theory as a form of it, has no answer to this question. You may prove to me that, upon the whole, there would be a greater sum of happiness in the universe were I to content myself with being the husband of one wife, but there would be a greater pleasure to me, so I think, to have another whom I love more: what is there in the theory of development to lead me to lay restraint on myself? But at the stage at which morality comes in there comes in an intuitive conscience which insists that this ought to be done because it is right, and points to a God who sanctions the whole. We have thus and here a motive which leads us to promote the happiness of all, and prompts us to do good as we have opportunity.

Fifth. It should be further noticed that intuitive morality requires us as a duty to promote the greatest happiness of the greatest number. This is as much a precept of the intuitional as of the utilitarian or hedonist theory of morals, with this very important difference that the former carries within itself and with it a motive to induce us to do good to others.

It should be noticed of this intuitive conscience that it looks to a law above it, and to which it is subordinate. This law is, "Do unto others even as ye would that others should do unto you." It follows, that love is the grand, the essential virtue—being always regulated by law. I prefer the phrase "love" to altruism, the Comtean one, which the school is seeking to introduce, inasmuch as the former demands an inward affection, whereas the latter might be satisfied with the outward act. Now, the possession of love is the best, the only certain means of promoting happiness. Being a fountain, it will be flowing out and watering all. It prompts to the promotion of the happiness of all sentient beings, including the lower animals. Being regulated by law, it will flow out in furthering the happiness of those with whom we come in contact, by pleasing manners, by obliging acts, by honoring all men, by sympathy with distress, by relieving the wants of the poor, by securing the education of the young, and the spread of literature and the arts, and the propagating of truth and love all over the world. The greatest-happiness principle is as much a part of intuitive as of utilitarian morals. My inward law and the God who planted it there require me to labor to promote the good of all mankind. But the intuitive theory requires other duties. It enjoins that we love and revere and worship God, and that we promote the moral excellence as well as the felicity of our fellow-men.

Sixth. It is needful to expose a fallacy running through his whole argument that moral good has respect to happiness as its end. It is that of making the conclusion wider than the premises, that of supposing that he has established the whole when he has proven only a part. He proves that happiness is an end and a good end, but not that it is the only end or the highest end.

SECTION XIV.

HIS GENERATION OF ALTRUISM OUT OF EGOISM.

Here I may repeat that I do not like the phrase Altruism, introduced by Comte, adopted by Spencer, and favored by their disciples, so that we know at once to what school a writer belongs when he uses it. We had an old word, Love, much more full of meaning, and with many pleasant associations, and I prefer using it, only I have to use our author's phraseology in explaining his meaning.

He argues with great ingenuity and power, and with a superabundance of illustrations, that altruism can be evolved from egoism. I am not sure that he has succeeded. He shows how altruism comes to be identified with egoism. I will allow Mr. Spencer to illustrate this in his own language. He shows how parents bequeath part of their bodies to form offspring at the cost of their own individualities, and how generally throughout the insect world maturity having been reached and a new generation provided for, life ends. When a part of the parental body is detached, in the shape of gemmule, or egg, or foetus, the material sacrifice is conspicuous; and when the mother yields milk, by absorbing which the young one grows, it cannot be questioned that there is also a material sacrifice.

The agitation which creatures show when their young are in danger, joined often with efforts on their behalf, as well as the grief displayed after loss of their young, make it manifest that in them parental altruism has a concomitant of emotion. Self-sacrifice, then, is no less primordial than self-preservation. He shows that there is an advance by degrees from unconscious parental altruism to conscious parental altruism, and farther, an advance from the altruism of the family to social altruism. Rising higher, personal welfare depends on due regard for the welfare of others. The bodily ill-being of a man's neighbors, say in the form of infectious disease, may come to affect the man himself. Each has a private interest in public morals and profits by improving them. Evils are suffered by those whose behavior is unsympathetic, and benefits are brought to self by unselfish conduct. Then there is an egoistic aspect of altruistic pleasure; for, whether knowingly or unknowingly gained, the state of mind accompanying altruistic action being a pleasurable state, is to be counted in the sum of pleasures which the individual receives. Then, a society, like a species, survives only on condition that each generation of its members shall yield to the next benefits equivalent to those it has received from the last. This dependence of egoism upon altruism ranges beyond the limits of each society and tends ever toward universality, and throughout the whole community the internal welfare of each becomes a matter of concern to the others. I have allowed Mr. Spencer to speak for himself. He has certainly shown how egoism and altruism may strengthen each other, supposing each to exist independently. When a work comes to be written, as I anticipate that there will sooner or later, on final cause as exhibited in evolution, the cases adduced by Spencer will be brought forward as eminent examples of design.

I can conceive altruism as mere outward action or conduct proceeding from egoism. But I see no evidence that self-interest can generate altruism in the sense of love. Any man can see that he who would make friends must make himself friendly. This may lead to kind acts, but not necessarily to kind dispositions; to beneficence, but not to benevolence. The acts done may proceed merely from a far-sighted selfishness, which is not virtue. But in human nature there are disinterested social feelings with not the slightest taint of selfishness. I believe that the love of self and the love of others are wells down in the depths of our nature which have sprung up simultaneously, being fed from on high, created, or if any prefer it, developed, which is simply a continuance of the creation. Only thus have we the true virtue. "Charity suffereth long and is kind; charity envieth not, charity vaunteth not itself, is not puffed up: doth not behave itself unseemly; seeketh not her own, is not easily provoked, thinketh no evil; rejoiceth not in iniquity, but rejoiceth in the truth; beareth all things, believeth all things, hopeth all things, endureth all things."

SECTION XV.

ETHICAL PRINCIPLES REJECTED BY HIM.

He rejects those theories which look (1) to the character of the agent; (2) to the nature of the motives; (3) to the quality of his deeds; (4) he also rejects free-will. In doing this he has set himself against the great body of our moralists in ancient and modern times. These maintain that the one or the whole of these should be looked at in approving an action as morally good, or disapproving of it as morally evil. According to the generally accepted doc-

trine a morally good action is the act of a (so far) good agent, swayed by a good motive, and doing a good deed, of his free-will. In judging of moral acts we look and feel that we ought to look to the agent, the actuating principle, the act, and the willingness of it. We declare that act to be good which is done by a man good at least for the moment, from a loving motive, just in itself, and from the heart.

The Character of the Agent.—We look to this so far in judging of the deed, and always in having any confidence that good will arise. If the man is a robber swayed by revenge, doing a deed bad in itself, but of an immediately useful tendency, say murdering another and a more formidable robber, we do not give our approbation.

The Motive.—However we may admire his talents, we do not regard that man as specially virtuous who, for the purpose of securing money, invented a machine which may add immeasurably to the resources of humanity. We do not give credit to one who does alms to be seen of men.

The Act.—We look to the deed considered in itself. It is not enough that it be well meaning, we must see whether it be conformed to the eternal principles of justice, and be fitted to further the best interests of the race. Every one acknowledges that there may be a weak charity, which promotes the evil which it is intended to remove.

Free-Will.—Mr. Spencer argues against the existence of free-will; the will of man is as little free as that of the brutes. Free-will is utterly inconsistent with his evolution theory. If it did exist it would be an evil. Every independent will, and much more such a will on the part of the hundreds of millions of human beings on the face of the earth at every given moment, might seriously interfere with that development which is going on so beneficently under the underground control of the unknown "Freedom

of Will," did it exist, would be at variance with the beneficent necessity displayed in the evolution of the correspondence between the organism and its environment (*Psych.*, i., 503). I confess I do not look forward with lively interest to the generation by development of a concrete in which the highest advance is without free-will and without love.

SECTION XVI.

HIS CRITICISM OF ETHICAL THEORIES.

He tries hard to prove that all theories of virtue show that happiness is their final end. With this view he examines the theory of perfection. It is supposed to have been held, in a general way, by Plato, and more distinctly by Jonathan Edwards. I am not sure that he has a very accurate idea of the view of either of these men. Plato held that the highest excellence consisted in the contemplation of the idea of the one, the true, the good, an opinion carried to an extreme by the Neo-Platonists of Alexandria. According to Edwards, virtue consists in love to being, according as being has claims upon it—a theory which implies an affection and a law of its distribution. Neither of these theories can aid him in constructing a theory which rests on happiness, for they both look to something above happiness.

He also examines the theory of those moralists who suppose themselves to have conceptions of virtue as an end underived from any other, and who look on virtue as not resolvable into simpler ideas. He thinks that Aristotle holds this view. Again I am in doubts. Aristotle's definition of virtue (*ἀρετή*) is a somewhat complex one: "It is a habit (or tendency) founded on, and exercising deliber-

ate preference in a measure relative to ourselves, defined by right reason, and according to the definition of a man of moral wisdom." It would take a dissertation to unfold all that is embraced in this. But there are two most important elements, altogether overlooked by Spencer, the one, that in virtue there is Will, even deliberate preference (*προαίρεσις*), and the other, Reason. But there are many moralists who think that virtue is not resolvable into simpler ideas, such as the Scottish School, Kant, and M. Cousin. Taking the virtues of courage and chastity, he argues, on the supposition that virtue is primordial and independent, no reason can be given why there should be any correspondence between virtuous conduct and conduct that is pleasurable in its total effects on self or others or both; and if there is not a necessary correspondence it is conceivable that the conduct classed as virtuous should be paingiving in its total effects. The answer is easy and at hand. Virtue being regulated love, or, at least, containing love as its highest element, the effect of it as a whole cannot be paingiving. In the case of the two virtues named, they need a more powerful motive than merely the promotion of happiness, and this is to be found in a rule like the Christian one, of doing to others as we would that they should do unto us. We thus see that in the end we should contemplate there is not only happiness but a further end—an end in itself—which promotes and so secures happiness.

He next examines, with the same view, the intuitional theory of morals. This has often been stated so as to make it indefensible. Properly enunciated it contains a truth which must have a place in a true theory of morals. Mind, I hold, has a power of knowing and discerning things. In particular its moral sense, or rather perception, has a power of perceiving good and evil in certain

voluntary acts—good in gratitude and evil in ingratitude. Specially it sees good in love under its various forms, such as sympathy, compassion. This love does look to the happiness of sentient creation. The law to which the conscience points guides and guards this love. It points to the objects and qualities toward which it should flow, and also to those from which it should turn away. It contains within itself a motive to the performance of the act, a compulsion—not a physical, but a moral one—to act.

SECTION XVII.

HIS UTILITARIANISM.

His theory is avowedly a form of the utilitarian. But he thinks he has given it a better form than it takes in the systems of Bentham and Mill. He calls his own system rational utilitarianism, as distinguished from empirical. He sees how vague and uncertain are the principles of the common utilitarianism and the uselessness for practical purposes of the precepts derived from them; it being difficult to decide as to many acts whether they are or are not, upon the whole, fitted to produce a greater amount of happiness or misery. He tells us, however, "I conceive it to be the business of moral science to deduce from the laws of life and the conditions of existence what kinds of action necessarily tend to produce happiness and what kinds to produce unhappiness. Having done this, its deductions are to be recognized as laws of conduct" (*Dat. Eth.*, 57). We will look forward with interest to his promised work, the *Principles of Morality*, to see if he is able to accomplish this.

It is important to be able to put what is sanctioned by

general utility into the form of laws. This is done imperfectly in the advices which parents give to their children, in the saws, proverbs, and wise maxims which pass from mouth to mouth in society, such as "Honesty is the best policy," "The truth wrongs no one." But these are loose in themselves and in the expression of them. A more definite enunciation of them, constituting a jurisprudence, might accomplish some important ethical ends. It would help to bring intuitive morals and utilitarian into closer correspondence. But it would not provide what is the great want of utilitarianism under all its forms. It has been shown again and again that the common utilitarianism has no sanction to authorize it, and no motives to constrain attention to what it recommends. The rational form is quite as powerless in this respect as the empirical. In the first place, the great body of mankind would not comprehend these laws, drawn out in scientific form, say by Mr. Spencer. Conceive a child, a savage, a laborer, a busy business man, a gay lady, a naturally frivolous boy obliged, in order to get ground for morality, to read ponderous volumes, drawing duty from "the laws of life and the conditions of existence." Suppose some one should succeed in all this, what would prevent him from setting all these laws at defiance, and rushing on to the gratification of his pride, his lust, his passion? "These are to be recognized as laws of conduct;" but where is the power to make this obligatory?

SECTION XVIII.

SPECIAL EXAMINATION OF HIS MORAL THEORY.

We are now in a position to understand and to judge of this new and considerably pretentious theory which is to give a scientific basis to ethics. Conduct is acts adjusted

to ends. Conduct is good when it accomplishes its ends. Conduct is morally good when it promotes the greatest happiness. There are passages which leave upon us the impression that mechanical acts may be regarded as good when, on the whole, they favor the production of pleasure, and this without at all looking to an agent. "Beyond the conduct commonly approved of or reprobated as right or wrong, there is included all conduct which furthers or hinders in either direct or indirect ways the welfare of self and others." According to this view there may certainly be good in organic acts, in all vital acts. The lower animals commit good acts when they do deeds which add to happiness. "There is a supposable formula for the activities of each species of animal which, could it be drawn out, would constitute a system of morality for that species!" Surely we have here a new ethical code. It seems the doctrine of the whole school. Darwin speaks deliberately of its being the duty of the hound to hunt. The morality of animals is supposed to rise insensibly and by degrees into that of man.

He makes the biological progression with its controls generate the conscience. "The intuitions of a moral faculty are the slowly-organized results of experience received by the race." In fact, the conscience seems to be merely a nervous structure. "I believe that the experiences of utility organized and consolidated through all past generations of the human race have been producing corresponding nervous modifications which, by continued transmission and accumulation, have become in us certain faculties of moral intuition." *Our moral intuitions are thus nervous modifications become hereditary!* Is this the highest product of development? this the keystone of the new philosophy?

He gives to this conscience a certain impulsive and

guiding power. "That the intuitions of a moral faculty should guide our conduct is a proposition in which truth is contained, for these intuitions of a moral faculty are the slowly-organized results received of the race while living in presence of these conditions." The conscience thus generated evidently cannot furnish a standard or an ultimate criterion. In different circumstances and with a different heredity its decisions might have been different. In opposition to all this, I hold that conscience is an intuition looking into certain voluntary acts and declaring them to be good or evil in their very nature. This conscience can stand the tests of intuition, even those of Spencer. It is self-evident, and its negation is inconceivable; we cannot conceive that hypocrisy, say religious hypocrisy, should be good. The culmination of our philosophy is thus Hamilton's favorite maxim: "On earth there is nothing great but man, in man there is nothing great but mind;" and I might add, in mind there is nothing great but love guided by law.

This carries with it Moral Obligation. Spencer takes much the same view of obligation as Bain. He supposes it to arise from a restraint imposed by force, such as a ruler, a government, or supernatural agency—in which last Spencer does not believe. Interpreting the revelations of conscience as an intuition, I claim for it a higher place. It is an obligation to obey a law involving, as Kant powerfully argues, a law-giver, being evidently the very governor who has presided over organic development, as it contends with its environments, and causing it to make for happiness. The obligation is laid upon us to do what is right, and in doing so to give every one his due, and as much as within us lies to promote his welfare. This gives the idea of justice, and our obligation to attend to it.

Of the same character is the idea, the sense, and the

obligation of Duty. Spencer argues that as morality advances from an act to a habit, the feeling of duty becomes less and less, and may disappear. There is some truth here, but it is only partial truth. When the habit of good is completed, the work is done without restraint. But then the felt obligation of duty is necessary to form the habit. It is best when the sense of duty and love go together in the performance of an act. When the feeling of obligation is withdrawn, the feelings will be apt to waver and the conduct to become inconsistent. It is not necessary that people should always be thinking of the restraint; the habits and sentiments will often act best when they follow their own generated nature. But it is important that the law should ever be there, even as the horse will go all the steadier because of the curb in his mouth, though the rider may not always be using it.

SECTION XIX.

ABSOLUTE AND RELATIVE ETHICS.

He has an Absolute Ethics, and thinks it of great moment that he should have. But it is like the meeting of the asymptotes of an hyperbola at an infinite distance. It will be reached when the external circumstances are brought into harmony with the internal life. "The co-existence of a perfect man and an imperfect society is impossible" (p. 179). I hold, on the contrary, that it may be, nay, that it has actually been, the work of a perfect man to labor to make society perfect. He tells us, farther, that "conduct which has any concomitant of pain or any painful consequence is partially wrong" (p. 261). With my views of morality I cannot coincide with this. I do not know that

it is partially wrong to cut off a limb when by doing so life is preserved, still less to conquer a vice by an exertion which may be painful. "Actions of a kind purely pleasurable in their immediate and remote effects are absolutely right," and "they only." It is allowed that it must be unnumbered ages before there can be such actions. "Ethics has for its subject-matter that form which universal conduct assumes during the last stages of evolution," "these last stages in the evolution of being when man is forced, by increase of numbers, to live more and more in presence of his fellows." We are told "that the conduct to which we apply the name good is the relatively more evolved conduct; and that bad is the name we apply to conduct which is relatively less evolved." It is clear that his absolute ethics can be reached only when development has advanced hundreds of thousands or millions of years. An old fisherman who lived eighteen hundred years ago knew somehow that this world was to be burned up with fire; and it is a part of Spencer's philosophy that this must be so, and I suspect that this conflagration may be kindled before his perfect ethics are reached,—and then will not be reached, for then there will be intolerable pain. And, after all, what interest have the men and women now living, and anxious, it may be, to know what is their present duty, in this inconceivably remote state of things? After all, his perfect ethics do not consist in love, or in any voluntary acts or dispositions, but, to all appearance, simply in an advanced zoological concretion in which there will indeed be no pain (though how it is to be got rid of is not explained), but at the same time no room for heroism, self-sacrifice, and devotion.

He has also a Relative Ethics, but not, so far as I can see, of a high character. "It is the least wrong which is relatively right." His statements on this subject leave

morality in a very uncertain and loose state, and might open the door to all sorts of excuses for the neglect of what is, after all, paramount duty. "Throughout a considerable part of conduct no guiding, no method of estimation enables us to say whether a proposed course is even relatively right as causing proximately and remotely, specially and generally, the greatest surplus of good over evil." How much room is left here for the crooked casuistry of the heart! "As now carried on, life hourly sets the claims of present self against the claims of future self, and hourly brings individual interests face to face with the interests of other individuals, taken singly or as associated. In many such cases the *decisions can be nothing more than compromises.*"

What an encouragement in all this to compromises, to favor personal aggrandizement or sensual gratification! He gives the case of a farmer whose political principles prompt him to vote in opposition to his landlord. "The man in such a case has to balance the evil that may arise to his family against the evil that may arise to his country. In countless such cases no one can decide by which of the alternative courses the least wrong is likely to be done" (p. 267). Is this safe morality? And yet I believe it is the only morality that can result from the balancings of pleasures and pains. Call in a moral law, and it will decide the question at once, and declare that the man ought to follow his principles and leave the issues to God.

Mr. Spencer has an ideal. All great men have. He thinks that there is a development now going on which must produce a better state of things. In this respect his system is, in my view, superior to that still more pretentious one of pessimism which has been gendered in disappointed and diseased minds as in a marsh, and after which some speculative youths are wondering. But I have doubts

whether the agencies which he calls in can effect the end he is expecting—the removal of all evil. Hitherto the advance of intelligence and civilization, while it has removed certain evils, has introduced others, and apparently must continue to do so. Amidst all ameliorations of outward estate moral evil abideth—sin which Spencer has never ventured to look at. The happy close to our world's history which so many are looking for will not be brought about except by causes that remove the moral evil. I do expect that “at evening time it will be light.” But I believe that it is to be brought about by a higher power superinduced on all that has gone before.

I confess that I am not able very clearly to see what is to be the precise state of this world millions of years hence, when the powers at present acting are fully developed, and before it is burned up by fire. Certain vices will have disappeared, but others, I fear, may have increased. I can see no way in which pain, in which disease is to be altogether removed. In the condensed and crowded state of society there must be struggles for existence, competing interests, clashing rivalries, and wars. In the presence one of another, certain evils will be restrained, but others will be kindled in the collision—human nature remaining as it is. The evil will not be removed except by some power which ameliorates human nature, embracing man's affections and will.

In an earlier Number of this Series, in speaking of “What Development can do, and what it cannot do,” I have shown that new powers, natural or supernatural have appeared as the ages advanced. I believe in all that Spencer has established as to progression in nature: of the animate being superinduced upon the inanimate; of the sentient upon the insentient; of the conscious upon the unconscious; of the intelligent upon the unintelligent, and of the moral upon

the intelligent ; but I may, and I do cherish the expectation of a higher advancement rising above all that has gone before. Agassiz perceived in the frames of the lower animals the anticipations of man's more fully developed body, so in man's intellectual and moral nature I discover a prognostic of a higher and a spiritual character.

I have written the paper which I am now to close with a deep sense of responsibility, being awed at once by the masterly ability of my opponent, and the vast interests, speculative and practical, at stake. I have endeavored to examine Mr. Spencer's philosophy, as in former years I did that of Mr. Mill (when his fame was the highest), fairly and candidly. My labor has been stiff because the work I review is a stiff one and is developed in so many elaborate volumes. I see no difficulty in answering our author, provided I understand him. I believe I see his meaning and can estimate the drift of his speculations. I have followed the development of his system from his "*First Principles*" onward to the beginning of the consummation of his work. I have cheerfully accepted his scientific statement of facts and some of his interpretations of them, but have superadded others quite as important and quite as certain. I am aware that the little work published does not unfold his full ethical views, and if, in further unfolding his plan, he brings in truth fitted to fill the wide gaps which we see yawning before us, I will have more pleasure in withdrawing the objections I have taken than I have had in advancing them.

I am constrained to conclude that the work does not furnish a scientific basis to ethics. Had it been described as a *Preparatio Ethica*, I might have something to say in its behalf. He does show that in the earlier animal ages there was an advance in happiness, and that there was a preparation for morality to appear, and that there are aids

to human virtue in prearrangements to call it forth and sustain it. This is what he has succeeded in. But he has not entered the subject of ethics, which has to look to character and to voluntary acts of human beings.

The system propounded implies a morality without a God, or at least without any God known or knowable. There is no obligation provided requiring us to love, to revere and worship God. The morality recommended has its sanction from a long process of development which has gone on for millions of years, carrying a mysterious power with it, but this not from a guide, governor, or law-giver—of whom, I believe, nature gives evidence as conducting the development orderly and beneficently. It has sanctions from organic agencies working unconsciously (I believe for a purpose), but implying no responsibility to a ruler or a judge. It is not supposed to carry with it, as Kant maintained that the practical reason did, the necessity and certainty of a world to come and of a judgment-day. So far as I comprehend, it does not require or enjoin that virtue should be voluntary. It does not give love or benevolence a place, as I believe it ought to have the highest place, in all good conduct. It declares that morality is that which promotes happiness, but it has no constraining motive, such as the intuitive conscience supplies, for leading men to feel that they ought to labor for the welfare of others.

Our new ethics thus withdraws many of the motives which were supplied by the old morality. And it does not supply others likely to take their place and to sway the great body of mankind: men, women and children, civilized and savage, in joy and in sorrow, in prosperity and in adversity, in the hour of temptation and at death. I can conceive that some persons who have mastered the development theory, who believe in it enthusiastically, may be moved by it to high exertion, as feeling that they are

thereby falling in with the whole evolution of nature. But what motive does it supply to the peasant, the laborer, the young man and maiden, to lead them to resist evil and follow the good? And what are we to do with our reading youth entering on life who are told in scientific lectures and journals that the old sanctions of morality are all undermined? What are we to do for them, and what are they to do in that transition period which Mr. Spencer acknowledges to be so perilous? You may say, Read Spencer's elaborate volumes and fill your mind with his system. But this is what the great body of mankind will not and cannot do, and if they did would any one thereby be interested or moved? Our author does not believe that "his conclusions will meet with any considerable acceptance." I believe the deluge of fire will come before they cover the earth. In these circumstances it is surely wisdom to rest on the old foundations, on an inward monitor guaranteed by God, till new ones are supplied on which we and others can rest.

In this age we have had two men of powerful intellect, who have sought to construct the universe without calling in God, an independent moral law, or the immortality of the soul. The one of these, J. S. Mill, I had the courage to oppose when his reputation was at its greatest height. His influence has diminished and is now chiefly in the spheres of Induction and Political Economy, on both of which he has thrown considerable light. The other has not so clear or acute a mind, but he is a more powerful speculator, and is more thoroughly conversant with biology, the promising science of the day. I place the two together in order to remark, that they both have brought thinking to a very blank issue. The one making matter "a mere possibility of sensation," and mind "a series of feelings aware of it-

self," and giving us no morality, but merely pleasure. It is felt, especially since the publication of his posthumous work, that his philosophy as a whole is a failure. The other starts with the unknown and unknowable, sets agoing a mechanical development out of physical data, in which there is no requirement of moral law and no free-will; the whole ending in a conflagration, leaving as the ashes only the unknown and unknowable, with which it started. I am sure that neither meets the demands of our intellect, nor the cravings of our heart.

The sphinx is still propounding the riddle of the universe. There are two very powerful men in our day who have tried to solve the problem and have failed. We know what, according to the fable, their fate must be.

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